

U. S. Environmental Protection Agency
Public Water System Supervision Program

Final Report
Data Verification Review

State of West Virginia
Department of Health and Human Resources
Office of Environmental Health Services
Environmental Engineering Division

Prepared by **Confidential Business Info**
for
The Environmental Protection Agency
Office of Ground Water & Drinking Water
February 8, 2006

Data Verification Final Report
West Virginia Department of Health and Human Resources
Office of Environmental Health Services

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FINAL REPORT

U.S. Environmental Protection Agency Public Water System Supervision Program Data Verification Report

Environmental Engineering Division
Office of Environmental Health Services
West Virginia Department of Health and Human Resources

February 8, 2006

EXECUTIVE SUMMARY

I. Introduction

During the week of July 11, 2005, the “team,” consisting of representatives of ^{Confidenti}
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^{CONFIDENTIAL BUSINESS} and of U.S. EPA Region 3, Wanda Johnson and Dan Campanelli, conducted a data verification (DV) in the Environmental Engineering Division, Office of Environmental Health Services, West Virginia Department of Health and Human Resources (WVDHHR). The team reviewed the files of a number of randomly selected public water systems (PWSs) maintained by WVDHHR. The team reviewed community water systems (CWSs), nontransient noncommunity water systems (NTNCWSs), and transient noncommunity water systems (TNCWSs). This report documents the findings of the review.

A. *State Offices*

The team reviewed files in the WVDHHR Central Office in Charleston. WVDHHR’s program is centralized, with five District Offices organized by county served. The Central Office is responsible for all compliance determination while the District Offices are responsible for sanitary surveys and technical assistance. The review was conducted using WVDHHR’s hard copy files and the state Safe Drinking Water Information System (SDWIS/State).

B. *Description of Sample*

Table 1 identifies the Federal Safe Drinking Water Information System (SDWIS/Fed) inventory for WVDHHR and the number of systems in the stratified, random sample reviewed by the team. The samples represent a 95-percent confidence interval with an error tolerance level of 7 percent for CWSs and a 90-percent confidence interval with a 10 percent error tolerance level for NTNCWSs and TNCWSs (see Section C - Description of Review). The list of systems reviewed is in Appendix A.

C. Description of Review

The team reviewed WVDHHR's files and SDWIS/State for updates to inventory and compliance data for the Consumer Confidence Reports Rule (CCR), the Total Coliform Rule (TCR), the Lead and Copper Rule (LCR), the Phase II/V Rules, Surface Water Treatment Rule (SWTR), Interim Enhanced SWTR (IESWTR), Radionuclides Rule, Stage 1 Disinfection By-Products Rule (Stage 1 DBPR), the Public Notification Rule (PN), and the Filter Backwash Recycling Rule (FBRR). The periods of review are shown in Table 2.

Table 1: Number of PWSs in SDWIS/Fed, WVDHHR Inventory, and Number Reviewed by the Data Verification Team

	Number of CWSs	Number of NTNCWSs	Number of TNCWSs
SDWIS/Fed Inventory ¹	535	158	527
WVDHHR Inventory	515	157	526
Systems in Sample	(35 total)	18	12
Small System	25		
Medium System	4		
Large System	6		
Very Large System	0		
Number Reviewed	(35 total)	18	12
Small System	25		
Medium System	4		
Large System	6		
Very Large System	0		

¹SDWIS/Fed inventory as of 7/6/05. West Virginia inventory as of 7/12/05.

Very Large: >1,000,000
Large: 10,000-999,999

Medium: 3,300-9,999
Small: <3,300

II. Findings

Below are the findings of the DV team. We will discuss any implementation policies specific to the state, the greatest strengths of the state's drinking water program, and the areas most needing improvement, as related to the major discrepancies identified. Tables 3A-G numerically summarize the discrepancies detected for each system type.

Implementation of Regulations in West Virginia

West Virginia has primacy for all rules reviewed by the DV team. West Virginia does not currently issue any variances or exemptions, but when the arsenic regulation is revised, exemptions may be issued to any PWSs that qualify.

WVDHHR has developed a policy for "Partnership Agreements for Public Water Systems" that enumerates the responsibilities of consecutive water systems that combine under operating

Table 2: Periods of Review

<u>Category</u>	<u>Date</u>
Inventory	Most recent
CCR	Year 2003, due 2004
Sanitary Survey	2 most recent surveys
Total Coliform Rule	Apr 1, 2004 - Mar 31, 2005
Lead & Copper Rule	2 most recent samples
Phase II/V (except nitrate)	2002-2004
Nitrate	2003, 2004
Stage 1 DBPR	Apr 1, 2004 - Mar 31, 2005
Radionuclides	2 most recent samples
SWTR	Apr 1, 2004 - Mar 31, 2005
IESWTR	Apr 1, 2004 - Mar 31, 2005
FBRR	Apr 1, 2004 - Mar 31, 2005
Public Notice	Per related violation

agreements to be operated as one large system. The agreements set out compliance parameters for inventory, bacteriological monitoring, chemical monitoring, distribution system chlorine monitoring, lead and copper monitoring, and sanitary surveys.

For its waiver program, West Virginia employs synthetic organic chemical (SOC) and volatile organic compound (VOC) waivers to systems with clean monitoring histories, no vulnerability issues and no other water quality or sanitary violations. Surface water systems must have a watershed delineation and inventory of possible contaminants to be eligible for a waiver. Use waivers are available for pesticides and polychlorinated biphenyls (PCBs) and susceptibility/vulnerability waivers are available for the remainder of the SOCs and all VOCs. Waivers are renewed every 3 years, via a review by state personnel for the following compliance cycle. Statewide asbestos waivers are based on the absence of asbestos-cement pipe along with the aggressiveness index of the source water. No other waivers are available for inorganic chemicals (IOCs).

West Virginia requires all of its PWSs to employ disinfection. WVDHHR's schedule for sanitary surveys is every 3 years for surface water and ground water under the influence of surface water (GWUDI) CWSs and every 5 years for all other systems, except TNCWSs and NTNCWSs served by ground water which are every 10 years. WVDHHR's District Offices track sanitary survey frequency and the Central Office assumes the schedule is being kept.

Strengths of Program

West Virginia is a well-organized program. Its recent centralization of all administrative and compliance activities has greatly enhanced the effectiveness of the program. WVDHHR benefits from dedicated staff in the Central and District Offices, which oversee all aspects of the drinking water program. Central and District Office personnel responded to the team's questions with detailed explanations that revealed understanding of the systems' histories as well as intense ongoing efforts to bring problem systems into compliance.

The team noted that WVDHHR files contained detailed records of operator certification. Annual sampling schedules sent to the systems were detailed and informative. The files also contained letters informing systems of "grandfathering" status for radiological contaminants. Letters notifying systems about compliance with the Stage 2 DBPR and the Long-Term 1 Enhanced Surface Water Treatment Rule were present in the files as well indicating that systems are being prepared well in advance for compliance with these new rules.

The team also noted that WVDHHR performs total compliance reviews on PWSs and sometimes revokes Phase II/V waivers post-review.

No discrepancies were identified for CCR, FBRR, radiologicals or IESWTR; only two discrepancies were found for SWTR, and two for PN.

Areas Needing Improvement

If analytical results are received more than 10 days after the end of a compliance period, WVDHHR deletes the violation and a return to compliance code (SOX) is entered into SDWIS/State. The DV team noted that this practice of deleting “reporting” violations is not acceptable and issued discrepancies in these cases. The state can track, categorize, and label monitoring and reporting violations separately. EPA, however, has elected to combine the two failures (and others, such as failure to use an approved analytical method, or use a certified laboratory) into one reporting category – a monitoring and reporting (M/R) violation. Regardless of how the state chooses to label or categorize the violations, when it comes to reporting to EPA, all of these failures are identified as M/R violations. If any type of M/R violation occurs, the state is aware of the violation, and the state did not report the violation to EPA, then a “data flow discrepancy” was assigned. In addition, if the DV team could not verify that the state was aware of the violation, the discrepancy was categorized as a “compliance determination discrepancy”. In either case, however, the state may not ignore or erase violations that actually occurred regardless of the way they are “labeled” or grouped. The DV team assigned discrepancies over most rules that were the result of WVDHHR’s deletion of “reporting” violations.

The team noted that there were many violations from 2002 through 2004 that had not yet been reported to SDWIS/Fed. Reporting is sometimes complicated by a lack of resources for the Compliance staff and a lag time in the validation of violations. The DV team believes that a state’s obligation to perform timely compliance determinations is driven by 40 CFR 142.15(a)(1), which says that states are to submit quarterly reports to EPA including; “new violations by public water systems in the state during the previous quarter.” For example, if monitoring was to be completed by December 31, 2004 and a system failed to complete the required monitoring by the that date, the system has violated the requirement (i.e., incurred a “new” violation) irrespective of a state determination. In addition, EPA believes that 40 CFR 142.15(a)(1) requires the state to report that violation to EPA before the end of following quarter – in this case by March 31, 2005. If the state did not make the violation determination, it does not alter the fact that the violation occurred, nor does it change the requirement that the violation was to be reported to EPA by March 31, 2005. In situations like the example above, the DV team determined that a violation occurred. If the state had made the same determination, then a data flow discrepancy was assigned. If there was no evidence that the state made the same determination, then a compliance determination discrepancy was cited.

It was also noted that at least two of WVDHHR’s certified laboratories (Test America and REI Consultants) failed to meet the detection limits (DLs) listed at 40 CFR 141.24(h)(18) for multiple contaminants for 11 CWSs and 4 NTNCWSs during the 2002 - 2004 sample period. A laboratory that cannot meet the DLs can use the upper confidence limits (UCLs) specified in Water System Guidance #77 dated December 16, 1993 (available at <http://www.epa.gov/safewater/wsg/subject.html#chemicals>). The laboratory’s method detection limits (MDLs), however, were above the specified UCLs.

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If a laboratory does not meet the DL (or at least the UCL) for any contaminant, the result of the analysis constitutes a “detection” of the contaminant because the laboratory’s “no detect” result does not guarantee that the chemical concentration is, in fact, less than the federal DL (i.e., the chemical concentration in the sample could exceed the federal detection limit but still be undetected by the laboratory). A system in this situation is required by 40 CFR 141.24(f)(11) and 141.24(h)(7) to conduct quarterly monitoring for the “detected” contaminant until the oversight agency determines that the concentration of the chemical is reliably and consistently (R&C) below the MCL.

WVDHHR receives all raw data for the Stage 1 DBPR; data are entered into SDWIS/State. Unfortunately, in September 2004, the distribution system chlorine residual results were overwritten with another set of data from a state requirement. The WVDHHR requires that all systems take a single chlorine residual sample daily in the distribution system, in addition to the DBPR requirement to sample disinfection residual at the same time and in the same place as TCR. Because the DBPR compliance data were overwritten with the state-required data, WVDHHR was unable to use SDWIS/State to determine compliance during the period of our review. Although the over-written data were discovered almost immediately, WVDHHR was only able to physically scan distribution system disinfection results to check that none were over the MCL and could not provide monthly and running annual averages for compliance. The DV team assigned discrepancies in these cases.

The team recommends that:

- WVDHHR should not delete “reporting” violations from SDWIS/State, but should report them to SDWIS/Fed.
- WVDHHR should determine compliance for all rules and report new violations to SDWIS/Fed in a timely manner.
- WVDHHR should encourage systems to use laboratories that can meet the federal DLs. Alternatively, WVDHHR could suggest that surface water systems collect four consecutive quarterly samples or ground water systems collect two consecutive quarterly samples to determine whether the system is reliably and consistently (R&C) below the MCL.
- WVDHHR should encourage the District Offices to continue to update inventory information in SDWIS/State for upload to SDWIS/Fed.
- WVDHHR should ensure that systems have a sanitary survey completed at least every 5 years, or every 3 years where applicable.
- WVDHHR should ensure that systems serving more than 4,900 persons take TCR samples throughout the month, not all on the same day.

- WVDHHR should ensure that distribution system disinfectant residual compliance calculations are completed either by the systems or by WVDHHR personnel and that violations are reported to SDWIS/Fed accordingly.
- WVDHHR should be aware that if a system fails to sample for distribution system disinfection residuals, regardless of whether or not it sampled for TCR, a violation should be assigned.
- WVDHHR should ensure that total organic carbon (TOC) compliance calculations are well documented, including documentation if the system is using alternate criteria for a given month.
- WVDHHR should ensure that if maximum residual disinfectant levels (MRDLs) are exceeded, systems receive violations and complete required increased monitoring.
- WVDHHR should ensure that systems monitor for LCR at correct intervals (annually, triennially) and during the “summer months” of June through September. Violations should be assigned to systems that fail to adhere to this monitoring schedule.
- WVDHHR should ensure that all SWTR reporting failures receive M/R violations.
- WVDHHR should ensure that all PN requirements are met or violations should be assigned.

The DV team hopes that the findings and recommendations outlined in this report will be of use to WVDHHR in improving data reporting and tracking methods.

Table 3A: Inventory Data

Type of Reporting Discrepancy	Community Water Systems		Nontransient Noncommunity Water Systems		Transient Noncommunity Water Systems	
	Number of Systems Reviewed	Number of Systems With Discrepancies	Number of Systems Reviewed	Number of Systems With Discrepancies	Number of Systems Reviewed	Number of Systems With Discrepancies
Wrong PWSID	35	0	18	0	12	0
System type not in agreement with SDWIS/Fed	35	0	18	1	12	0
System status not in agreement with SDWIS/Fed (<i>active/inactive</i>)	35	0	18	1	12	0
System activity status not in agreement with SDWIS/Fed	35	0	18	0	12	0
System source type not in agreement with SDWIS/Fed (<i>SW, SWP, GU, GUP, GW, GWP</i>)	35	0	18	1	12	0
Inaccurate population (<i>state records and SDWIS/Fed not within 10%</i>)	35	5	18	3	12	1
Inaccurate service connections (<i>state records and SDWIS/Fed not within 10%</i>)	35	4	18	2	12	1
Wrong or missing name of administrative contact in SDWIS/Fed	35	1	18	1	12	0
Wrong or missing address of administrative contact in SDWIS/Fed	35	1	18	0	12	0

Table 3B: CWS Discrepancies - Monitoring and Reporting

	A	Violation Statistics				Discrepancies			
		B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Sanitary Survey	35	2	2	0	0	2	0	0	2
Consumer Confidence Reports (CCR)	35	6	6	6	6	0	0	0	0
Total Coliform Rule (TCR)	35	6	16	6	5	10	1	0	11
Nitrate/Nitrite	23	6	10	8	3	2	5	0	7
Inorganic Chemicals (IOCs)	23	3	4	4	1	0	3	0	3
Volatile Organic Compounds (VOCs)	23	2	3	2	0	1	2	0	3
Synthetic Organic Chemicals (SOCs)	23	14	17	3	0	14	3	0	17
Filter Backwash Recycling Rule (FBRR)	11	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (Stage 1	26	25	254	18	0	236	18	0	254
Radiologicals	23	2	2	2	2	0	0	0	0
Lead and Copper Rule (LCR)	35	21	25	14	12	11	2	0	13
Surface Water Treatment Rule (SWTR)	8	0	0	0	0	0	0	0	0
Interim Enhanced SWTR (IESWTR)	3	0	0	0	0	0	0	0	0
Public Notification (PN)	35	2	2	0	0	2	0	0	2

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations

Column F: The number of determinations that EPA believes the state should have made that it did not make

Column G: The number of determinations that the state did make that did not appear in the federal database

Column H: Of the data elements being reviewed, reflects the number that EPA believes were not reported or were erroneously reported to the federal database

Table 3C: CWS Discrepancies - Maximum Contaminant Level and Treatment Techniques

	A	Violation Statistics				Discrepancies			
		B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Total Coliform Rule (TCR)	35	1	1	1	1	0	0	0	0
Nitrate/Nitrite	23	0	0	0	0	0	0	0	0
Inorganic Chemicals (IOCs)	23	0	0	0	0	0	0	0	0
Volatile Organic Compounds (VOCs)	23	0	0	0	0	0	0	0	0
Synthetic Organic Chemicals (SOCs)	23	0	0	0	0	0	0	0	0
Filter Backwash Recycling Rule (FBRR)	11	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (Stage 1 DBPR)	26	2	2	1	0	1	1	0	2
Radiologicals	23	0	0	0	0	0	0	0	0
Lead and Copper Rule (LCR)	35	0	0	0	0	0	0	0	0
Surface Water Treatment Rule (SWTR)	8	0	0	0	0	0	0	0	0
Interim Enhanced SWTR (IESWTR)	3	0	0	0	0	0	0	0	0

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations

Column F: The number of determinations that EPA believes the state should have made that it did not make

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Column H: Of the data elements being reviewed, reflects the number that EPA believes were not reported or were erroneously reported to the federal database

Table 3D: NTNCWS Discrepancies - Monitoring and Reporting

	A	Violation Statistics				Discrepancies			
		B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Sanitary Survey	18	3	3	0	0	3	0	0	3
Total Coliform Rule (TCR)	18	4	5	4	4	1	0	0	1
Nitrate/Nitrite	17	4	4	4	2	0	2	0	2
Inorganic Chemicals (IOCs)	17	5	5	5	1	0	4	0	4
Volatile Organic Compounds (VOCs)	17	5	8	7	6	1	1	0	2
Synthetic Organic Chemicals (SOCs)	17	6	10	6	6	4	0	0	4
Filter Backwash Recycling Rule (FBRR)	1	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (Stage 1 DBPR)	17	17	39	8	0	31	8	0	39
Lead and Copper Rule (LCR)	18	8	8	4	4	4	0	0	4
Surface Water Treatment Rule (SWTR)	1	0	0	0	0	0	0	0	0
Public Notification (PN)	18	0	0	0	0	0	0	0	0

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations

Column F: The number of determinations that EPA believes the state should have made that it did not make

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Table 3E: NTNCWS Discrepancies - Maximum Contaminant Level and Treatment Techniques

	A	Violation Statistics				Discrepancies			
		B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Total Coliform Rule (TCR)	18	0	0	0	0	0	0	0	0
Nitrate/Nitrite	17	0	0	0	0	0	0	0	0
Inorganic Chemicals (IOCs)	17	0	0	0	0	0	0	0	0
Volatile Organic Compounds (VOCs)	17	0	0	0	0	0	0	0	0
Synthetic Organic Chemicals (SOCs)	17	0	0	0	0	0	0	0	0
Filter Backwash Recycling Rule (FBRR)	1	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (Stage 1 DBPR)	17	1	1	0	0	1	0	0	1
Lead and Copper Rule (LCR)	18	0	0	0	0	0	0	0	0
Surface Water Treatment Rule (SWTR)	1	0	0	0	0	0	0	0	0

Column D: Documentation was found in state files (electronic or hard copy) that state made correct determinations

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Table 3F: TNCWS Discrepancies - Monitoring and Reporting

	A	Violation Statistics				Discrepancies			
		B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Sanitary Survey	12	1	1	0	0	1	0	0	1
Total Coliform Rule (TCR)	12	4	7	6	6	1	0	1	2
Nitrate/Nitrite	12	2	2	2	0	0	2	0	2
Filter Backwash Recycling Rule (FBRR)	0	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (Stage 1)	0	0	0	0	0	0	0	0	0
Surface Water Treatment Rule (SWTR)	1	1	6	4	4	2	0	0	2
Public Notification (PN)	12	0	0	0	0	0	0	0	0

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Table 3G: TNCWS Discrepancies - Maximum Contaminant Level and Treatment Techniques

	A	Violation Statistics				Discrepancies			
		B	C	D	E	F (C - D)	G (D - E)	H (Over-Reporting)	I (F + G + H)
Rule or Activity Category	Number of Systems Reviewed	Number of Systems with Violations Identified by DV Team	Total Number of Violations Identified by DV Team	Number of Violations in Column C Also Identified by State	Number of Violations in Column D Reported to EPA Data System	Number of Compliance Determination Discrepancies	Number of Data Flow Discrepancies	Number of Violations Reported to EPA Not Identified by DV Team	Total Number of Discrepancies
Total Coliform Rule (TCR)	12	0	0	0	0	0	0	0	0
Nitrate/Nitrite	12	0	0	0	0	0	0	0	0
Filter Backwash Recycling Rule (FBRR)	0	0	0	0	0	0	0	0	0
Stage 1 Disinfection Byproducts (Stage 1	0	0	0	0	0	0	0	0	0
Surface Water Treatment Rule (SWTR)	1	0	0	0	0	0	0	0	0

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I. Introduction

During the week of July 11, 2005, the “team,” consisting of representatives of ^{Confidential Business Info}
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^{Confidential Business} and of U.S. EPA Region 3, Wanda Johnson and Dan Campanelli, conducted a data verification (DV) in the Environmental Engineering Division, Office of Environmental Health Services, West Virginia Department of Health and Human Resources (WVDHHR). The team reviewed the files of a number of randomly selected public water systems (PWSs) maintained by WVDHHR. The team reviewed community water systems (CWSs), nontransient noncommunity water systems (NTNCWSs), and transient noncommunity water systems (TNCWSs). This report documents the findings of the review.

The team reviewed files in the WVDHHR Central Office in Charleston. WVDHHR’s program is centralized, with five District Offices organized by county served. The Central Office is responsible for all compliance determinations while the District Offices are responsible for sanitary surveys and technical assistance. The review was conducted using WVDHHR’s hard copy files and the state Safe Drinking Water Information System (SDWIS/State).

The DV had two objectives. The first was to detect any discrepancies between the PWS data in WVDHHR’s files and database and the data reported to the Federal Safe Drinking Water Information System (SDWIS/Fed) regarding inventory, enforcement, violations, and milestones (if applicable) for the Total Coliform Rule (TCR), Lead and Copper Rule (LCR), Phase II/V Rules, Stage 1 Disinfection By-Products Rules (Stage 1 DBPR), Surface Water Treatment Rule (SWTR) and Interim Enhanced SWTR (IESWTR), radiological contaminants, Filter Backwash Recycling Rule (FBRR) and Consumer Confidence Reports (CCR) Rule. The second objective was to ensure that WVDHHR is determining compliance in accordance with federal and state primacy regulations. Note that the DV team does not review the effectiveness of enforcement actions initiated by the state, nor does the team issue discrepancies if the state does not initiate enforcement proceedings against systems.

The outcome of a DV is an itemization of discrepancies, calculated by system type (i.e., CWS, NTNCWS, and TNCWS) and by regulation. The team totals the number of violations incurred by the systems during the period of review and then determines the number of these violations, and any other discrepancies, that were not reported to SDWIS/Fed.

There are two types of discrepancies: data flow discrepancies and compliance determination discrepancies. Data flow discrepancies are violations of National Primary Drinking Water Regulations that are detected by the program, but are not posted to SDWIS/Fed. Team members know that the program detected the violation when they find correspondence with the system, enforcement actions, or violations in SDWIS/State. Data flow discrepancies

also occur when the state incorrectly reports a violation to SDWIS/Fed, such as by incorrectly coding a violation. Compliance determination discrepancies occur when the program did not detect the violation or reported a violation to SDWIS/Fed that was not substantiated by information contained in the program files or database.

Appendix A lists the systems reviewed in West Virginia. Appendix B contains a complete list of the types of discrepancies identified by the team and the definitions of the discrepancies. Tables 3A-G in the executive summary summarize the number and type of discrepancies for CWSs, NTNCWSs, and TNCWSs. Appendix C provides system-specific lists of each discrepancy organized by rule. Appendix D contains West Virginia's Waivers Procedures and Criteria.

II. Description of the Sample

The number of systems reviewed was based on the total inventory of West Virginia systems in SDWIS/Fed as of July 6, 2005. That inventory consisted of 535 active CWSs, 158 active NTNCWSs and 527 active TNCWSs. From that inventory, 35 CWSs, 18 NTNCWSs, and 12 TNCWSs were randomly selected for review. This sample size was based on a targeted confidence level of 95 percent with an error tolerance level of 7 percent for CWSs and 90 percent with an error tolerance level of 10 percent for NTNCWSs and TNCWSs. A detailed description of the sampling methodology can be found in chapter 3 of the *EPA Protocol for Participation in a PWSS Program Data Verification*, available from **Confidential Business Info**

III. State Data Flow

Describing the flow of information from the point of sample collection to submission of violations, enforcement actions, and milestones to SDWIS/Fed sometimes illustrates problems states face in managing their large data sets. The chain of custody for samples is explained below, as are the methods used by WVDHHR to store information and calculate compliance.

System Files. All analytical results are maintained in the WVDHHR hard copy files in Charleston. District Offices may maintain their own files, but the files of record are located in Charleston.

WVDHHR receives approximately 70 percent of bacteriological tests electronically and the remainder (30 percent bacteriological, 100 percent chemical and radiologicals) in paper form. The team and WVDHHR noted that there is sometimes a substantial backlog of data to be

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entered by state personnel. The data entered by state personnel undergoes validation by Central Office staff.

The WVDHHR Central Office keeps on site hard copies of any chemical analyses for 12 years. If a system becomes inactive for more than a year, the entire inactive file is sent to a retention center. Correspondence and related material including monthly operational reports and FBRR are primarily maintained at the Central Office; however, these same records may be located at WVDHHR district offices.

Sample Collection and Analysis. System owners or operators are responsible for the collection of all samples, although they may contract with a laboratory to have a certified sampler collect them. Analyses are conducted by a combination of the state laboratory and commercial state-certified laboratories: 70 percent state/30 percent commercial for TCR, 40 percent state/60 percent commercial, and 5 percent state/95 percent commercial for Phase II/V and radiologicals. Samples are delivered to the laboratories by hand, by U.S. mail, by overnight courier, or by certified samplers who may also use the U.S. mail or deliver the samples themselves.

The majority of analytical results are submitted to WVDHHR in hard copy, except for analyses from the State Laboratory, which submits TCR results both electronically and in hard copy. District Offices can access analytical results through SDWIS/State.

Data Storage and Compliance Determination. WVDHHR uses SDWIS/State to store data for inventory, analyses, violations, and enforcements. SDWIS/State resides on the Department server on a shared Oracle platform. The Central and District Offices have real-time access to SDWIS/State.

In the event of a positive total coliform sample, or if fecal coliform or *E. coli* are detected, the laboratory must notify the water system and fax a copy of the results to the WVDHHR Compliance and Enforcement section within 24 hours. The Central Office will notify the District Offices which will, in turn, notify the PWS of the need for repeat and increased sampling either by letter for positive total coliform results, or by telephone and letter for fecal coliform or *E. coli* positive results. This new policy took effect on June 1, 2005. Previously positive results were faxed to the Data Management section. WVDHHR believes the new policy improves response time to positive TCR results.

For Phase II/V contaminants, the laboratories forward all results to the WVDHHR Data Management section, where the results are entered into SDWIS/State. The Compliance and Enforcement section creates a report to determine potential increased sampling frequency on a routine basis, and notifies systems with detections via a letter of the need for increased sampling.

For maximum contaminant level (MCL) violations, the laboratories will notify WVDHHR on an as needed basis, because very few Phase II/V MCL violations occur in West Virginia.

Each month after analytical results are received, compliance is determined by the Central Office Compliance Officers using SDWIS/State. Determination of violations is semi-automated, using the compliance decision support (CDS) module in SDWIS/State. Pre-compliance reports are generated, giving a list of potential violations. The potential violation reports are reviewed by the Compliance Officers, who check them against systems' monitoring schedules to ensure that increased monitoring is scheduled, then violations are validated. Violations are migrated back into SDWIS/State and violation letters are generated using an add-on program developed for that purpose.

All violations are tracked in SDWIS/State. If a return-to-compliance (RTC) code is not generated by SDWIS/State (i.e., if sample results are not received), systems are put on a significant non-complier (SNC) list. This list is forwarded to the Department paralegal for further action.

If analytical results are received later than 10 days after the end of a compliance period, WVDHHR deletes the violation and a return to compliance code (SOX) is entered into SDWIS/State. The DV team noted that this practice of deleting "reporting" violations is not acceptable and discrepancies were issued in these cases. The team notes that the state can track, categorize, and label monitoring and reporting (M/R) violations separately. EPA, however, has elected to combine the two failures (and others, such as failure to use an approved analytical method, or use a certified laboratory) into one reporting category – an M/R violation. Regardless of how the state chooses to label, or categorize the violations, when it comes to reporting to EPA, all of these failures are identified as M/R violations. If any type of M/R violation occurred and state was aware of the violation, and the state did not report the violation to EPA, then a "data flow discrepancy" was assigned. In addition, if the DV team could not verify that the state was aware of the violation, the discrepancy was categorized as a "compliance determination discrepancy". In either case, however, the state may not ignore or erase violations that occurred regardless of the way they are "labeled" or grouped.

The team noted that there were many violations from 2002 through 2004 that had not yet been reported to SDWIS/Fed. Reporting is sometimes complicated by a lack of resources for the Compliance staff and a lag time in the validation of violations. The DV team believes that a state's obligation to perform timely compliance determinations is driven by 40 CFR 142.15(a)(1), which says that states are to submit quarterly reports to EPA including; "new violations by public water systems in the state during the previous quarter." For example, if monitoring was to be completed by December 31, 2004 and a system failed to complete the required monitoring by that date, the system violated the requirement (i.e., incurred a "new"

violation) irrespective of a state determination. In addition, EPA believes that 40 CFR 142.15(a)(1) requires the state to report that violation to EPA before the end of following quarter – in this case by March 31, 2005. If the state did not make the violation determination, it does not alter the fact that the violation occurred, nor does it change the requirement that the violation was to be reported to EPA by March 31, 2005. In situations such as the example above, the DV team determined that a violation occurred. If the state made the same determination, then a data flow discrepancy was assigned. If there was no evidence that the state made the same determination, then a compliance determination discrepancy was cited.

WVDHHR has issued and reported some PN violations to SDWIS/Fed, but not on a consistent basis. WVDHHR began consistently issuing and reporting PN violations in early 2005. WVDHHR does not report violations for failure to conduct sanitary surveys. WVDHHR requires all systems to provide disinfection.

SDWIS/Fed Submittals. Violation and enforcement data are reported to SDWIS/Fed by system. To report violation, enforcement, and inventory data to SDWIS/Fed, WVDHHR extracts data transfer format (DTF) files from SDWIS/State and emails the files to the EPA Region 3 data manager for transfer to the National Computing Center (NCC). WVDHHR also forwards updates via the Central Data Exchange (CDX) using the new XML protocol. Updates are submitted to quarterly to SDWIS/Fed. At this time WVDHHR can only update SDWIS/Fed using the total replace process, because DTF writer, which is used for traditional updates, is not compatible with Microsoft Windows XP, the WVDHHR's standard operating system. WVDHHR has had few problems transmitting data to SDWIS/Fed.

WVDHHR receives error reports and believes that the error reports are useful. Errors are generally corrected with the next quarterly total replace submission; significant errors are corrected immediately.

WVDHHR's greatest data management concern is that it is difficult to retain staff because the current state salary structure does not allow for any salary increases. The program is woefully short of compliance officers. Also, the WVDHHR does not get feedback regarding the quality of data sent to the new CDX system. It should be noted that after the data are sent through the new CDX system, and it is processed and inserted into the new Operational Data Storage (ODS), WVDHHR will automatically receive error reports via the new CDX system."

IV. Inventory Data

A. Scope of Inventory Data Reviewed

Inventory information about each PWS regulated by the state is required to be reported to

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EPA. This required inventory information is collectively referred to as the “Inventory Core Data Set.” The Inventory Core Data Set is divided into three primary groups:

- **Registration** - data elements necessary for a system to become registered in, or added to, the federal database. Failure to provide these data elements will result in the water system being rejected for inclusion in the federal database.
- **Grant Eligibility** - data elements that must be present for a registered system to be counted in the state’s water system inventory when EPA calculates the state’s PWSS formula grant allotment. Failure to provide these data elements will result in the water system not being included in the inventory that is used to calculate the state PWSS grant allotments.
- **Grant Withholding (Avoidance)** - EPA regional offices may use the absence of reporting of these data elements to withhold a portion of the state’s PWSS formula grant allotment. (*Absence of reporting of these data elements will not, however, be used in calculating the state’s formula PWSS grant allotment.*)

The review upon which this data verification report is based did not look at every data element in the Inventory Core Data set. The review focused on these eight elements:

- PWS ID Number
- PWS Type (*i.e., Community; Nontransient Noncommunity; or Transient Noncommunity*)
- PWS Status (*i.e., current or historical*)
- PWS Source Type (*i.e., Ground Water; Purchased Ground Water; Surface Water; Purchased Surface Water; Groundwater Under the Influence of Surface Water; or Purchased Groundwater Under the Influence of Surface Water*)
- Population Served by the PWS
- Number of Retail Service Connections
- Administrative Contact (AC)/Responsible Party
- Address of Administrative Contact/Responsible Party

For each water system in the review sample, the team compared the information in the state’s files, or data system, to the information in the federal data system. Whenever there was an inconsistency in the information, the difference was noted. For most of the data elements reviewed, the information is expected to be in complete agreement (e.g., the PWSID number must agree, the system type must agree), or a data discrepancy is recorded for that data element. For population and service connections, however, there is no data discrepancy unless the

difference between the information in the state records and in the federal data system is greater than 10 percent.

B. State Inventory Reporting Process

WVDHHR's inventory information is maintained in hard copy files in the Central Office and in SDWIS/State. District Offices also retain their own files, although the inventory of record resides in Charleston. Inventory information is updated from sanitary surveys, phone calls, correspondence, and inspections. Inventory changes are entered directly into SDWIS/State by District Office personnel as needed. If a PWS does not provide population data, a guidance has been developed that gives an "average number of persons per household" multiplier for each county for use in calculating population.

District Office personnel, after the centralization of records in Charleston, have been updating inventory information in SDWIS/State as sanitary surveys and other activities are conducted.

C. Inventory Discrepancies

The DV team compared inventory information in SDWIS/State to the information in SDWIS/Fed for 65 systems (35 CWSs, 18 NTNCWSs, and 12 TNCWSs) for the data elements listed above in subsection A.

One CWS had a discrepancy for AC address. One CWS and 1 NTNCWS had discrepancies for AC name. There were 5 population discrepancies for CWSs, 3 for NTNCWSs and 1 for TNCWSs. There were 4 service connection discrepancies for CWSs, 2 for NTNCWSs and 1 for TNCWSs. There was one discrepancy each for system type, system status, and source for NTNCWSs.

The inventory data findings are summarized in Table 3A of the executive summary. The individual discrepancy findings are in Exhibits 1 and 2 of Appendix C.

D. General Statistics on Reporting the Inventory Core Data Set

In addition to reviewing the eight data elements listed above for each system in this review, this report presents general statistics on all of the data elements in the Inventory Core Data Set for all of the water systems in the state's inventory. The statistics were not compiled on site during the review, but were obtained from a standard SDWIS/Fed Report (SDWRPT32) retrieved from the federal database on July 6, 2005, approximately 2 weeks before the on-site review. Presented below is a table that lists:

- The number of the active systems which are also current.
- The number (and percent) of the current, active systems for which the state has reported all of the registration and grant eligibility data elements.
- The number (and percent) of the current, active systems for which the state has reported all of the data elements required for registration, grant eligibility, and avoidance of potential grant withholding.

Table 4. State-wide Statistics on the Inventory Core Data Set					
System Type	Active & Current Systems	Active, Current Systems That Are Grant Eligible		Systems for Which All Grant Withholding Data Has Been Reported	
		Systems	Percent	Systems	Percent
CWSs	535	535	100.0%	291	54.4%
NTNCWSs	158	158	100.0%	43	27.2%
TNCWSs	527	527	100.0%	508	96.4%
Total	1,220	1,220	100.0%	842	69.0%

When this report was produced from SDWIS/Fed (on July 6, 2005) all of the state's systems were grant eligible. Overall, the required reporting for the Inventory Core Data Set was present on 100 percent of the systems. Conversely, 378 systems (31 percent) were missing at least one data element that is required to avoid potential grant withholding. The most common data element omissions were: source treatment flag not valued, missing treatment plant addresses or treatment plant lat/longs, treatment plant method, accuracy, description (MAD) data, source lat/long, and source lat/long MAD data.

WVDHHR recently centralized its compliance activities and District Offices were asked to update all inventory information. Therefore, the missing inventory data will be updated as the Districts uncover new information.

Recommendations

- WVDHHR should encourage the District Offices to continue to update inventory information in SDWIS/State for upload to SDWIS/Fed.

V. Sanitary Surveys

A. State Sanitary Survey Program Summary

WVDHHR's schedule for sanitary surveys is every 3 years for surface water and ground water under the influence of surface water (GWUDI) CWSs and every 5 years for ground water systems. WVDHHR conducts sanitary surveys on all non-community systems with a ground water source (TNCWS and NTNCWS) every 10 years. WVDHHR's District Offices track sanitary survey frequency and the Central Office assumes the schedule is being kept. WVDHHR does not issue violations to systems for failure to have a sanitary survey completed.

WVDHHR notes that its regulations require that all ground water systems disinfect their water, and when analysis has determined that the source is not GWUDI, the source is deemed "protected" by WVDHHR, therefore, noncommunity water systems that meet this criteria are required to have a sanitary survey conducted every 10 years.

B. Sanitary Survey Discrepancies

The review team checked to see whether an initial sanitary survey was conducted by the required date and whether subsequent surveys were performed at least every 5 years. A total of 6 sanitary survey discrepancies were identified: 2 CWSs, 3 NTNCWSs, and 1 TNCWS had surveys that were conducted more than 5 years apart or initial sanitary surveys that were conducted after the required date. The sanitary survey findings are summarized in Tables 3B, 3D, and 3F of the executive summary. The system-specific discrepancy findings are in Exhibit 3 of Appendix C.

Recommendations

- The WVDHHR Central Office should ensure that community water systems have a sanitary survey completed at least every 5 years.
- WVDHHR should continue to track the frequency of sanitary surveys completed by the Field Offices.

VI. Consumer Confidence Reports

A. State Consumer Confidence Report Program Summary

The WVDHHR receives and dates CCRs and certifications and issues violations for content, late submission to customers, and late certification. WVDHHR personnel review drafts of CCRs and may return them to systems for correction before distribution. This process seems to work very well.

B. Consumer Confidence Report Discrepancies

The team checked to see whether CCRs for 2003 were sent to consumers by July 1, 2004, and whether WVDHHR had received certification by October 1, 2004. Six violations issued by WVDHHR were confirmed by the DV team. No discrepancies were identified.

Recommendations

- None.

VII. Total Coliform Rule

A. TCR Reporting Process

TCR data flow and compliance determination were described in section III. WVDHHR does not have an estimate as to whether repeat sampling is accomplished within 24 hours after notification of a positive result. If a repeat sample result is not received by WVDHHR within 14 days of the date of the original positive result, a repeat monitoring violation is assigned. Repeat sampling generally occurs before violations are assigned because many laboratories also notify systems of positive results and of the need for repeat sampling.

WVDHHR requires a minimum of five routine TCR samples in the month following a positive result unless the system is visited by field personnel and written documentation of the visit is present in the District files. WVDHHR may invalidate total coliform positive samples on a case-by-case basis, which must involve a technical assistance visit to the system.

B. TCR Discrepancies

The DV team reviewed hard copy files and data from SDWIS/State for TCR data collected from April 1, 2004, through March 31, 2005, for 35 CWSs, 18 NTNCWSs, and 12 TNCWSs.

The TCR findings are summarized in Tables 3B – 3G of the executive summary. See Exhibit 5 in Appendix C for a list of TCR discrepancies.

The team noted that monitoring and compliance determination for TCR are good. WVDHHR reported a substantial number of valid violations to SDWIS/Fed. There were two data flow discrepancies, one for a CWSs due to a violation present in SDWIS/State that had not yet been reported to SDWIS/Fed and one for a TNCWS that had been reported to SDWIS/State but that WVDHHR had difficulty removing after the violation was deemed to be invalid. One CWS serving more than 4,900 persons had 8 discrepancies for taking all its TCR samples on the same day instead of on different days throughout the month. One CWS had a “major” monitoring violation when the team determined that a “minor” violation was warranted. One CWS had a violation present in SDWIS/State but state records said the violation was deleted and the DV team was unable to determine why since the violation was returned to compliance. One NTNCWS had a violation that was invalidated by WVDHHR; the team determined that it should have remained valid. Sixteen violations issued by WVDHHR were confirmed by the DV team.

Recommendations

- WVDHHR should ensure that systems serving more than 4,900 persons take TCR samples throughout the month, not all on the same day.

VIII. Phase II/V Rules

A. Notes Regarding Phase II/V Rule Review Methodology

Beginning in 1999, DV teams no longer examine data for the 1993 – 1995 initial compliance period for the Phase II and V rules. For this DV, the team reviewed data and actions from only the most recent compliance period of 2002 – 2004 for the Phase II and V rules. The review did not determine whether waivers were issued or grandfathered data were accepted properly, and the team calculated compliance based on the schedule for monitoring established by the state for that compliance period.

B. Phase II/V Rule Reporting Process

Phase II/V data flow and compliance determination were described in section III. For its waiver program, West Virginia employs synthetic organic chemical (SOC) and volatile organic compound (VOC) waivers to systems with clean monitoring histories, no vulnerability issues and no other water quality or sanitary violations. Surface water systems must have a watershed delineation and inventory of possible contaminants to be eligible for a waiver. Use waivers are

available for pesticides and polychlorinated biphenyls (PCBs) and susceptibility/vulnerability waivers are available for the remainder of the SOCs and all VOCs.

The waiver renewal process was revised with the arsenic rule in May 2005. Waiver renewal will be based on a system having all results less than 50 percent of their respective MCLs, a current sanitary survey, a source water assessment program (SWAP) review, and an up to date wellhead protection program. Plus, District Offices will be tasked with determining source or treatment deficiencies.

WVDHHR's policy is to grant waivers wherever possible. WVDHHR believes that initially the waiver program placed a burden on the resources of the drinking water section, however, subsequent rounds of waivers should require fewer resources to complete.

WVDHHR plans to offer systems monitoring relief under the alternative monitoring guidelines based on source water assessments but will use the 6 and 9 year monitoring frequencies rather than the 5 year frequency.

Statewide asbestos waivers are based on the absence of asbestos-cement pipe along with the aggressiveness index of the source water. No other waivers are available for inorganic chemicals (IOCs). The waiver program was approved by EPA Region 3 in July of 1995. WVDHHR's waiver policy is provided in Appendix D.

IOCs. Statewide asbestos waivers are based on the absence of asbestos-cement pipe along with the aggressiveness index of the source water. No other waivers are available for IOCs.

VOCs. Vulnerability/Susceptibility waivers are available for VOCs.

SOCs. All systems are waived for dioxin, glyphosate, diquat, and endothall. Some systems are waived for all SOCs.

WVDHHR has developed a policy for "Partnership Agreements for Public Water Systems" that enumerates the responsibilities of consecutive water systems that combine under operating agreements to be operated as one large system. The agreements set out compliance parameters to be followed for inventory, bacteriological monitoring, chemical monitoring, distribution system chlorine monitoring, lead and copper monitoring, and sanitary surveys. West Virginia is not currently issuing any variances or exemptions, but when the arsenic regulation is revised, exemptions may be issued to any PWSs that qualify.

WVDHHR has developed guidance for sampling of new systems. In general new systems are required to perform initial tests for contaminants before installation of treatment and within 3

months of their activation date or for Phase II/V chemicals before the end of the current compliance period.

C. Phase II/V Rule Discrepancies

The DV team reviewed hard copy files for IOCs, VOCs, and SOC for the compliance period of January 1, 2002, through December 31, 2004; nitrates were reviewed for calendar years 2003 and 2004. Twenty-three CWSs, 17 NTNCWSs, and 12 TNCWSs were reviewed for nitrate discrepancies; 23 CWSs and 17 NTNCWSs were reviewed for IOC, VOC, and SOC discrepancies.

Eleven discrepancies were identified for nitrate/nitrite monitoring and reporting; 2 compliance determination and 9 data flow. All data flow discrepancies were due to WVDHHR issuing violations but failing to report the violations to SDWIS/Fed in a timely manner. Two compliance determination discrepancies were for 1 system that turned in results later than 10 days after the end of the compliance period and WVDHHR rescinded the assigned violation. Fourteen violations issued by WVDHHR were confirmed by the DV team.

Seven data flow discrepancies were found for IOCs; all were due to WVDHHR issuing violations but failing to report the violations to SDWIS/Fed in a timely manner. Nine violations issued by WVDHHR were confirmed by the DV team.

The team found two compliance determination discrepancies and three data flow discrepancies for VOCs. The data flow discrepancies were due to WVDHHR issuing violations but failing to report the violations to SDWIS/Fed in a timely manner. One compliance determination discrepancy was due to a surface water system that failed to monitor for VOCs annually and one was due to the analyzing laboratory failing to meet the method detection limit (MDL) for several VOCs. Nine violations issued by WVDHHR were confirmed by the DV team.

There were 18 compliance determination discrepancies for SOC and 3 data flow discrepancies. Fifteen compliance determination discrepancies were due to the analyzing laboratories failing to meet federal detection limits (DLs) or MDLs. One compliance determination discrepancy was due to a system serving more than 3,300 persons that failed to complete 2 quarters of sampling in one year during the 3-year compliance period; 1 system had an atrazine detect and no quarterly follow-up was found. All 3 data flow discrepancies were due to WVDHHR issuing violations but failing to report the violations to SDWIS/Fed in a timely manner. Nine violations issued by WVDHHR were confirmed by the DV team.

It was also noted that at least two of WVDHHR's certified laboratories (Test America and REI Consultants) failed to meet the DLs listed at 40 CFR 141.24(h)(18) for multiple

contaminants for 11 CWS and 4 NTNCWS during the 2002–2004 sample period. A laboratory that cannot meet the DLs can use the upper confidence limits (UCLs) specified in Water System Guidance #77 dated December 16, 1993 (available at <http://www.epa.gov/safewater/wsg/subject.html#chemicals>). The laboratory's MDLs, however, were above the specified UCLs.

If a laboratory does not meet the DL (or at least the UCL) for any contaminant, the result of the analysis constitutes a “detection” of the contaminant because the laboratory's “no detect” result does not guarantee that the chemical concentration is, in fact, less than the federal DL (i.e., the chemical concentration in the sample could exceed the federal DL but still be undetected by the laboratory). A system in this situation is required by 40 CFR 141.24(f)(11) and 141.24(h)(7) to conduct quarterly monitoring for the “detected” contaminant until the oversight agency determines that the concentration of the chemical is reliably and consistently (R&C) below the MCL.

The Phase II/V findings are summarized in Tables 3B – 3G of the executive summary. For a system-specific list of Phase II/V discrepancies by contaminant group, see Appendix C, Exhibit 6, for nitrate and nitrite; Exhibit 7 for IOCs; Exhibit 8 for VOCs; and Exhibit 9 for SOCs.

Recommendations

- WVDHHR should ensure compliance and reporting of violations to SDWIS/Fed for Phase II/V and nitrate/nitrite are completed in a timely manner.
- Systems with detections of Phase II/V contaminants should sample quarterly to establish if they are R&C below the MCL.
- WVDHHR should encourage the Enforcement and Compliance section staff to ensure that Phase II/V and nitrate/nitrite violations are validated in a timely manner, allowing a timely upload of information to SDWIS/Fed.
- WVDHHR should encourage systems to use laboratories that can meet the federal DLs. Alternatively, WVDHHR could suggest that surface water systems collect four consecutive quarterly samples or ground water systems collect two consecutive quarterly samples to determine whether the system is R&C below the MCL.

IX. Filter Backwash Recycling Rule

A. Filter Backwash Recycling Rule Reporting Process

Most systems provided written notification of whether they recycle under the FBRR. The WVDHHR completed a canvas of all systems that had the ability to recycle filter backwash and notified 31 systems. It is unknown whether all systems that were required to begin filtering backwash by June 8, 2003, have done so because this information resides in the District Offices, but thus far no systems have been required to make any changes to their recycling processes or any capital improvements to comply with the rule. During future annual inspections, District personnel will review the FBRR information kept on file at the PWSs. WVDHHR has not issued any violations for M/R or treatment technique failures.

B. Filter Backwash Recycling Rule Discrepancies

The team reviewed 11 CWSs and 1 NTNCWS subject to the FBRR. No discrepancies were identified.

Recommendations

- None.

X. Disinfectant and Disinfection By-Products Rule

A. Disinfectant and Disinfection By-Products Reporting Process

PWSs in West Virginia must submit DBPR sample results on a standard form, which is available on the Internet. Systems in West Virginia subject to the Stage 1 DBPR began reporting their information on time, except for ground water and small surface water systems, for which the first quarter of monitoring was waived.

WVDHHR receives all raw data for the Stage 1 DBPR; data are entered into SDWIS/State. Unfortunately, in September 2004, the distribution system chlorine residual results were overwritten with another set of data from a state requirement. The WVDHHR requires that all systems take a single chlorine residual sample daily in the distribution system, in addition to the DBPR requirement to sample disinfection residual at the same time and in the same place as TCR samples. Because the DBPR compliance data were overwritten with the state-required data, WVDHHR was unable to use SDWIS/State to determine compliance during the period of our review. Although the over-written data were discovered almost immediately, WVDHHR was

only able to physically scan distribution system disinfection results to check that none were over the MRDL and could not provide monthly and running annual averages for compliance. The DV team assigned discrepancies in those cases.

WVDHHR has designated August as the month of warmest water temperature for systems that are required to sample annually. If a system can provide data that proves another month of warmest water temperature the system may monitor during that month.

There are no TNCWSs that disinfect with chlorine dioxide so no chlorine dioxide monitoring is required for TNCWSs.

B. Disinfection By-Products Discrepancies

Twenty-three CWSs and 17 NTNCWSs in the sample that use a chemical disinfectant were reviewed. This rule garnered the most discrepancies, 296.

Of the 26 CWSs reviewed, 25 systems were assigned 237 compliance determination and 19 data flow discrepancies; most compliance determination discrepancies were due to no monthly or running annual averages provided for distribution system disinfection residual compliance calculation due to data being over-written as described in the previous section. There were 7 compliance determination discrepancies for failure to calculate total organic carbon (TOC) compliance correctly or at all. One CWS has 2 discrepancies for failure to sample quarterly for TTHMs after an MCL. One CWS had an MCL that was not detected by WVDHHR, and 2 CWS had 4 compliance determination discrepancies for failure to sample for TTHM and HAA5 with no violations assigned. There were 19 data flow discrepancies for CWSs, all due to WVDHHR issuing TTHM or chlorine residual monitoring violations but failing to report the violations to SDWIS/Fed in a timely manner.

For 17 NTNCWSs, 32 compliance determination and 8 data flow discrepancies were assigned. Most compliance determination discrepancies were due to no monthly or running annual averages provided for distribution system disinfection residual compliance calculation because data were over-written as described in the previous section. All data flow discrepancies were due to valid violations not being determined and uploaded to SDWIS/Fed in a timely manner. One NTNCWS had a running annual average distribution system chlorine maximum residual disinfectant level (MRDL) of 4.2 mg/L and no violation was assigned. Twenty-seven violations issued by WVDHHR were confirmed by the DV team.

The Stage 1 DBPR findings are summarized in Tables 3B – 3G of the executive summary. For a system-specific list of Stage 1 DBPR discrepancies, see Appendix C, Exhibit 11.

Recommendations

- WVDHHR should ensure that distribution system disinfectant residual compliance calculations are completed either by the systems or by WVDHHR personnel and violations are reported to SDWIS/Fed accordingly.
- WVDHHR should ensure that systems monitor for TOC and TTHM/HAA5 when required and that violations are reported to SDWIS/Fed for systems that fail to do so.
- WVDHHR should be aware that if a system fails to sample for distribution system disinfection residual, regardless of whether or not they sampled for TCR, a violation should be assigned.
- WVDHHR should ensure that TOC compliance calculations are well documented, including documentation if the system is using alternate criteria for a given month.
- WVDHHR should ensure that if MRDLs are exceeded systems should receive violations and complete required increased monitoring.

XI. Radiological Contaminants

A. Radiological Reporting Process

Radiological data flow and compliance determination were described in section III. WVDHHR has begun sampling for the new Radionuclides rule, allowing systems to “grandfather” data and assigning some systems quarterly monitoring schedules beginning in 2005. West Virginia has no systems that are deemed vulnerable and are required to monitor for Gross Beta.

B. Radiological Discrepancies

The DV team reviewed radiological data from the database for 23 CWSs for the two most recent samples, grandfathered data, or quarterly monitoring, whichever was applicable. Overall, radiological monitoring was very good. No discrepancies were identified.

Recommendations

- None.

XII. Lead and Copper Rule

A. Notes Regarding Lead and Copper Rule Review Methodology

Once the LCR Minor Revisions (LCRMR) had been in effect for over a year and many questions about implementation and reporting requirements for the LCR and LCRMR had been resolved, the DV teams began, in 2003, to count LCR discrepancies as for other rules. The team reviewed the two most recent samples collected for the systems included in the review.

B. Lead and Copper Reporting Process

Most of WVDHHR's systems completed initial monitoring on schedule. WVDHHR has primacy for the LCR and LCRMR and has begun reporting violations and milestones accordingly. The Central Office determines compliance with the LCR/LCRMR, however, it is not presently tracking whether corrosion control recommendations have been provided to all systems, but is only tracking action level exceedances (ALEs). WVDHHR determines compliance and optimal water quality control parameters (OWQPs) according to the LCRMR, but only had two large systems that had OWQPs assigned. It is unknown how many PWSs that were required to install corrosion control treatment by 1997 have not yet done so.

Lead and copper results are received as described in section III. Ninetieth-percentile values for lead and copper were calculated by the Compliance Officers; however, after 2005 SDWIS/State will calculate them. Therefore, the state will not routinely review the 90th percentile results. Data entry and routine compliance are handled the same as for other rules. WVDHHR has stated that because the Data Management Group has lost several data entry positions recently, there may be a backlog in entering LCR data. Also, during a switch in LCR schedules to coincide with Phase II/V 3-year compliance periods some systems were scheduled to sample at intervals greater than 3 years. The DV team assigned discrepancies in those cases.

In the event of an ALE, the responsible Compliance Officer may contact the system by phone, and it will mail the system a letter that outlines the steps to be followed after the ALE, including a timetable for completion and an example of public education language.

C. Lead and Copper Discrepancies

West Virginia has brought the LCR program to an improved level of compliance, especially considering the difficulties many states have encountered with this rule. LCR implementation for new systems and sources was sound. LCR files were complete and informative. There were relatively few LCR discrepancies.

The DV team reviewed lead and copper data for the 2 most recent samples for 35 CWSs and 18 NTNCWSs. The LCR findings are summarized in Tables 3B – 3E of the executive summary. For a system-specific listing of lead and copper discrepancies, see Exhibit 13 in Appendix C.

Eleven compliance determination and 2 data flow discrepancies were identified for CWSs; 4 compliance determination discrepancies were identified for NTNCWSs. Nineteen violations issued by the state were confirmed by the team.

There were two data flow discrepancies where 90th percentile lead results for systems serving more than 3,300 persons were not reported to SDWIS/Fed. The majority of discrepancies were compliance determination discrepancies related to WVDHHR's revision of the LCR sampling schedule to match the Phase II/V 3-year compliance periods as mentioned previously. One system had an incorrect violation date and one system did not sample in the June through September time frame and no violations were assigned. The team also noted that there were no instances in which PWSs had exceedances of either the lead or copper 90th percentile that were not recognized by the state.

Recommendations

- WVDHHR should ensure that systems monitor at correct intervals (annually, triennially) and during the “summer months” of June through September. Violations should be assigned to systems that fail to adhere to this monitoring schedule.
- WVDHHR should be advised that the violation begin date for LCR violations is the first day after the end of the compliance period. Currently the DV team accepts either October 1 of the same year or January 1 of the following year as correct but this may be clarified with the upcoming revisions to the LCR.

XIII. Surface Water Treatment Rule

A. Surface Water Treatment Rule Reporting Process

West Virginia has fewer than 10 unfiltered GWUDI systems that are required to install filtration. These systems have Administrative Orders against them but no schedules for compliance. These systems are “basket cases” for which no administrative contact or other information is available. No systems in West Virginia are allowed to avoid filtration.

One hundred percent of CWSs, 94 percent of NTNCWSs, and 93 percent of TNCWSs in existence prior to January 1, 2004, have completed GWUDI determinations. Three CWSs, 4 NTNCWSs, and 14 TNCWSs that came into existence or added new sources after January 1, 2004, that are in the process of completing GWUDI testing and evaluation.

Surface water monthly operating reports (MORs) are compiled by PWS operators on a standardized form and forwarded to the Data Management Section for data entry. After the data are entered, compliance is determined in SDWIS/State as for other rules. Follow-up on violations is the same as for other rules, including calls, letters, and site visits.

B. Surface Water Treatment Rule Discrepancies

The team reviewed SDWIS/State summaries for 8 community, 1 nontransient noncommunity, and 1 transient noncommunity non-purchased surface water systems serving populations of fewer than 10,000 persons. Two compliance determination discrepancies were identified for one TNCWS. The team found 1 violation assigned by WVDHHR to be invalid and found one monitoring violation that WVDHHR did not assign. Four violations assigned by WVDHHR were confirmed by the DV team.

The SWTR findings are summarized in Tables 3B – 3G of the executive summary. For a system-specific list of surface water treatment rule discrepancies, see Exhibit 14 in Appendix C.

Recommendations

- WVDHHR should ensure that all SWTR sampling failures receive M/R violations.

XIV. Interim Enhanced Surface Water Treatment Rule

A. Interim Enhanced Surface Water Treatment Rule Reporting Process

West Virginia surface water systems serving more than 10,000 persons began monitoring and reporting according to the IESWTR on time. West Virginia has completed collection of information on disinfection benchmarking.

B. Interim Enhanced Surface Water Treatment Rule Discrepancies

The team reviewed SDWIS/State summaries for 3 non-purchased surface water systems serving populations of more than 10,000 persons. All were reporting correctly, and no discrepancies were identified.

Recommendations

- None.

XV. Public Notification Rule

A. Public Notification Rule Reporting Process

The DV team confirms that PN was requested and received for all Tier 1 and 2 violations relevant to the compliance periods reviewed. The team conducts the PN review to ensure that requested PN is received by West Virginia in the specified time period and, if PN is not received, that violations are assigned for failure to provide PN.

Evidence of PN requests and their completion was present in most instances the team reviewed.

B. Public Notification Rule Discrepancies

Thirty-five CWSs, 18 NTNCWSs, and 12 TNCWSs were reviewed for compliance with PN. The PN process was fair; 2 discrepancies were identified. The PN findings are summarized in Tables 3B – 3E of the executive summary. For a system-specific listing of public notification discrepancies, see Exhibit 16 in Appendix C.

Recommendations

- WVDHHR should ensure that all PN requirements are met or violations should be assigned.

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The DV team hopes that the findings and recommendations outlined in this report will be of use to WVDHHR in improving data reporting and tracking methods.

Appendix A

Systems Selected for Review in West Virginia

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PWSID	System Name	Population	System Type	Source of Water
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Community Water Systems

WV3302031	ST ALBANS WATER	15,800	C	SW
WV3301046	WVAWC-NEW RIVER REGIONAL WTR TRTMT PLT	17,522	C	SW
WV3301705	CLARKSBURG WATER BOARD	18,520	C	SW
WV3302080	KANAWHA COUNTY RDA	11,110	C	SWP
WV3300512	FOLLANSBEE HOOVERSON HEIGHTS	5,035	C	SW
WV3301010	FAYETTEVILLE MUNICIPAL WATER	4,580	C	SW
WV3301810	RAVENSWOOD MUNICIPAL WATER WORKS	4,600	C	GW
WV3303121	CLAY BATTELLE PSD	3,500	C	SWP
WV3303402	CRAIGSVILLE PSD	4,204	C	SW
WV3305404	LUBECK PSD	7,760	C	GW
WV3300223	WOODS HOA, THE	1,518	C	GW
WV3300315	BOONE RALEIGH PSD	1,650	C	SW
WV3300502	BEECH BOTTOM WATER DEPT	600	C	GW
WV3301017	WVAWC - MONTGOMERY HEIGHTS DISTRICT	125	C	SWP
WV3301411	CENTRAL HAMPSHIRE PSD	1,783	C	SWP
WV3301601	MOOREFIELD MUNICIPAL WATER	2,585	C	SW
WV3301736	EAST VIEW PSD 194	475	C	SWP
WV3301911	GREEN ACRES MHP	65	C	GW
WV3302014	GLASGOW TOWN OF	970	C	SWP
WV3302066	UPPER KANAWHA VALLEY PSD	700	C	SWP
WV3302407	KIMBALL LIGHT & WATER CO-TIDEWATER	63	C	GW
WV3302421	WELCH CITY OF	2,907	C	GW
WV3302430	KEYSTONE MUNICIPAL WATER	448	C	GW
WV3302437	BRADSHAW WATER WORKS	233	C	GW
WV3303031	MINGO COUNTY PSD PIGEON CREEK	1,955	C	SWP
WV3303104	CHAPLIN HILL WATER ASSOC	100	C	SWP
WV3303301	BERKELEY SPRINGS CITY OF	2,440	C	SW
WV3303413	BIRCH RIVER PSD	575	C	SWP
WV3303613	PENDLETON CO PSD(BRANDYWINE)	750	C	GU
WV3303920	NEWBURG WATER	480	C	GW
WV3304014	PUTNAM UNION PSD	2,941	C	SWP
WV3304144	RAL CO PSD-FITZPATRICK	113	C	SWP
WV3304204	HARMAN TOWN OF	230	C	GU
WV3305511	MATHENY PSD	550	C	GW
WV3305521	BUCKEYE WTR-STEPHENSON - LOGAN P S D	140	C	GW

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Nontransient Noncommunity Water Systems

WV9902043	FAITH CHRISTIAN ACADEMY	250	NTNC	GW
WV9913074	SENECA TRAIL CHRISTIAN ACADEMY	100	NTNC	GW
WV9913111	UPS	52	NTNC	GW
WV9919005	BLUE RIDGE ELEMENTARY	421	NTNC	GW
WV9919031	NORTH JEFFERSON ELEMENTARY SCHOOL	526	NTNC	GW
WV9919037	SOUTH JEFFERSON ELEMENTARY	424	NTNC	GW
WV9921022	ROANOKE ELEMENTARY SCHOOL	160	NTNC	GW
WV9923040	ARCH OF WV - RUFFNER	350	NTNC	GW
WV9926008	M & G POLYMERS U S A LLC	325	NTNC	GW
WV9930015	DINGESS ELEMENTARY	308	NTNC	GW
WV9930095	BEN CREEK HEAD START	50	NTNC	GW
WV9931030	CONSOL LOVERIDGE MINE MIRACLE RUN	25	NTNC	SW
WV9933016	GREAT CACAPON ELEMENTARY	30	NTNC	GW
WV9933017	GREENWOOD ELEMENTARY	85	NTNC	GW
WV9950025	DUNLOW ELEMENTARY	100	NTNC	GW
WV9950086	VAMC - HUNTINGTON	1,759	NTNC	SWP
WV9951016	HACKER VALLEY ELEMENTARY	108	NTNC	GW
WV9951025	ICG EASTERN, LLC - BIRCH RIVER MINE	105	NTNC	GW

Transient Noncommunity Water Systems

WV9904021	BIG RUN CAMPGROUND	25	TNC	GW
WV9929028	ROBERT CRAIG MEMORIAL CAMPGROUND	25	TNC	GW
WV9931009	COOPERS ROCK STATE PARK	103	TNC	SW
WV9938056	WATOGA STATE PARK	25	TNC	GW
WV9938087	MOUNTAIN QUEST INSTITUTE	29	TNC	GW
WV9939146	BIG DS HOT SPOT	25	TNC	GW
WV9942001	USFS ALPENA GAP	80	TNC	GW
WV9948023	DEBS BAR	25	TNC	GW
WV9950010	CABWAYLINGO GROUP CAMP	42	TNC	GW
WV9955071	CASTLE ROCK RESTAURANT INC	25	TNC	GW
WV9955081	ELK LICK SENIOR CITIZEN CENTER	25	TNC	GW
WV9955090	CENTER FOOD & FUEL	25	TNC	GW

Appendix B
Data Verification Discrepancy Definitions

DATA VERIFICATION DISCREPANCY DEFINITIONS

There are two types of discrepancies: data flow discrepancies and compliance determination discrepancies. Data flow discrepancies are violations of National Primary Drinking Water Regulations that are detected by the state, but are not forwarded to SDWIS/Fed. The team knows that the state detected the violation when it finds correspondence with the system, enforcement actions, or violations in the state database. Data flow discrepancies also occur when the state incorrectly reports the violation to SDWIS/Fed, such as incorrectly coding a violation. Compliance determination discrepancies occur when the state did not detect a violation or reports a violation to SDWIS/Fed that was not substantiated by information contained in the state files or database. The following is a complete list of the types of discrepancies identified by the team and their definitions.

Inventory — A discrepancy exists if there is a difference between the state data and the data in the SDWIS/Fed 35 report. Inventory data reviewed include:

System Type — Community Water System (CWS), Nontransient Noncommunity Water System (NTNCWS), or Transient Noncommunity Water System (TNCWS).

System Status — Active or Inactive.

Source — Ground Water (GW), Purchased Ground Water (GWP), Surface Water (SW), or Purchased Surface Water (SWP), Ground Water Under the Direct Influence of Surface Water (GWUDI) and Purchased Ground Water Under the Direct Influence of Surface Water (PGWUDI).

Population and Service Connections — a discrepancy is recorded if the difference between state and SDWIS/Fed data is greater than 10 percent or affects a system's monitoring requirements.

Address, Name, PWSID — address discrepancies are determined from the primary address field.

Sanitary survey — a discrepancy is issued if surveys are not conducted every 5 years and no '28' violation is issued by the state and submitted to SDWIS/Fed.

Consumer Confidence Report (CCR) — a discrepancy is recorded if a CCR is not received by July of the appropriate year and a violation is not properly assigned by the state and submitted to SDWIS/Fed.

For the remaining elements reviewed during the DV, there are two types of discrepancies noted. Data flow discrepancies, instances where the state files and SDWIS/Fed do not agree, make up the first type. Compliance determination discrepancies make up the second type. These discrepancies are either instances where the state overlooked a violation or when the DV team determines that the state is not following the federal regulations, its approved primacy package,

or another policy approved by the EPA Region. The report will itemize both types of discrepancies.

TCR, Phase II/V, Radiologicals, and Stage 1 DBPR. For monitoring and reporting (M/R) and maximum contaminant level (MCL) violations, discrepancies are generally of two types: (1) evidence of a violation in the state data that is not recorded in SDWIS/Fed or (2) a violation in SDWIS/Fed which is not supported by state data.

LCR. In addition to M/R discrepancies under the Lead and Copper Rule, milestone and treatment technique discrepancies are also noted. Milestones are important system events, such as a lead exceedance (PB90) or copper exceedance (CU90), that are SDWIS/Fed reporting requirements. Treatment techniques include steps that a system is required to take following a lead or copper exceedance to ensure public safety and show compliance with the LCR (e.g., public education or corrosion control study).

SWTR and IESWTR. Discrepancies include M/R, treatment technique, or filtration status. Treatment techniques refer to turbidity and disinfection residual level requirements under the SWTR. Filtration status indicates whether a system has a filtration plant on line, if the system is filtered, or whether the system is installing filtration.

Appendix C
System Specific Data Discrepancies
Exhibits 1-16

Exhibit 1 Name, Address, Administrative Contact and PWSID Discrepancy Report			
		ADDRESS	
PWSID	SYSTEM NAME	STATE RECORDS	SDWIS/FED
COMMUNITY WATER SYSTEMS			
WV3305404	Lubeck PSD	AC: James Smith	AC: Lee Johnson
WV3302437	Bradshaw Water Works	ADD: P.O. Box 450	ADD: P.O. Box 3
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS			
WV9923040	Arch of WV - Ruffner	AC: Anthony Gatens	AC: Jeff Caldwell
TRANSIENT NONCOMMUNITY WATER SYSTEMS			
No discrepancies identified.			
<i>AC - administrative contact</i>		<i>ADD - Address</i>	
		<i>NF - not found</i>	

Exhibit 2
Inventory Discrepancy Report

		<u>POPULATION</u>		<u>SERVICE CONNECTIONS</u>		<u>TYPE OF SYSTEM</u>		<u>STATUS OF SYSTEM</u>		<u>SOURCE</u>	
PWSID	SYSTEM NAME	STATE	SDWIS/ FED	STATE	SDWIS/ FED	STATE	SDWIS/ FED	STATE	SDWIS/ FED	STATE	SDWIS/ FED
COMMUNITY WATER SYSTEMS											
WV3302031	St Albans Water	13,377	15,800								
WV3300512	Follansbee Hooverston Heights			2,081	1,878						
WV3301010	Fayetteville Municipal Water	4,111	4,580								
WV3305404	Lubeck PSD	9,144	7,760	3,826	2,300						
WV3301411	Central Hampshire PSD	NF	1,783								
WV3304144	Ral Co PDS - Fitzpatrick	207	113	87	29						
WV3305521	Buckeye Wtr-Stephenson-Logan PSD			NF	63						
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS											
WV9919031	North Jefferson Elementary School	381	526	1	210						
WV9930095	Ben Creek Head Start	NF	50	NF	15	NF	NTNC	NF	Active	NF	GW
WV9951016	Hacker Valley Elementary	82	108								
TRANSIENT NONCOMMUNITY WATER SYSTEMS											
WV9904021	Big Run Campground			21	15						
WV9931009	Coopers Rock State Park	832	1,003								

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CWS - Community Water System

F - Federal Government

GP - purchased ground water source

GU - ground water under the influence of surface water

GUP - purchased ground water under the influence of surface water

GW - groundwater source

L - local government

M - mixed public/private

N - Native American

NF - not found

NTNC - nontransient noncommunity water system

P - private

S - state government

SDWIS/FED - violation listed in SDWIS/Fed

STATE - violation assigned by the state

SW - surface water source

SWP - purchased surface water source

TNC - transient noncommunity water system

Exhibit 3 Sanitary Survey Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
WV3301911	Green Acres MHP	NF	NF	NF	NF	NF	NF	3100	28	1/1/96	Sanitary survey conducted 3/19/01. Did not find sanitary survey 5 years previous. No violation was assigned.	1 cd M/R
WV3304014	Putnam Union PSD	NF	NF	NF	NF	NF	NF	3100	28	1/1/02	Sanitary surveys conducted 11/20/97 and 1/7/04, more than 5 years apart. No violation assigned.	1 cd M/R
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
WV9930015	Dingess Elementary	NF	NF	NF	NF	NF	NF	3100	28	6/29/99	System should have taken initial sanitary survey by 6/99. Survey was not completed until 12/00. No violation was assigned.	1 cd M/R
WV9930095	Ben Creek Head Start	NF	NF	NF	NF	NF	NF	3100	28	6/29/99	System should have taken initial sanitary survey by 6/99. Survey was not completed until 8/00. No violation was assigned.	1 cd M/R
WV9933017	Greenwood Elementary	NF	NF	NF	NF	NF	NF	3100	28	6/29/99	System should have taken initial sanitary survey by 6/99. Survey was not completed until 9/00. No violation was assigned.	1 cd M/R
TRANSIENT NONCOMMUNITY WATER SYSTEMS												
WV9929028	Robert Craig Memorial Campground	NF	NF	NF	NF	NF	NF	3100	28	6/29/99	System should have taken initial sanitary survey by 6/99. Survey was not completed until 8/00. No violation was assigned.	1 cd M/R

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28 - Sanitary Survey Violation, TCR

DV - violations assessed by the data verification team

NF - not found

SDWIS/FED - violations listed in SDWIS/Fed

STATE RECORDS - violation assigned by the state

Exhibit 4 Consumer Confidence Report Discrepancy Report											
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
COMMUNITY WATER SYSTEMS											
No discrepancies were identified.											

7000 - Consumer Confidence Report Rule

71 - M/R violation

72 - CCR inadequate reporting/late certification

DV - violations assessed by the data verification team

M/R - monitoring and/or reporting Violation

NF - not found

SDWIS/FED - violations listed in SDWIS/Fed

STATE RECORDS - violation assigned by the state

Exhibit 5 Total Coliform Rule Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
WV3300512	Follansbee Hooverson Heights	NF	NF	NF	NF	NF	NF	3100	24	4/1/04 5/1/04 6/1/04 7/1/04 8/1/04 10/1/04 12/1/04 2//1/05	System serving >4,900 persons (taking more than 6 samples per month) took all TCR samples on the same day. No violation was assigned.	8 cd M/R
WV3302430	Keystone Municipal Water	3100	23	6/1/04	3100	23	6/1/04	3100	24	6/1/04	State assigned a “major” monitoring violation in June 2004 when the system took 1 of 5 required samples, making the violation a “minor” one. Incorrect violation code was assigned.	1 cd M/R
WV3303104	Chaplin Hill Water Assoc	3100	23	5/1/04	NF	NF	NF	3100	23	5/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV3303301	Berkeley Springs, City of	3100	23	9/1/04	NF	NF	NF	NF	NF	NF	Violation found in state records but state says violation was deleted. Team was unable to determine why, when the correct number of samples were taken and the violation was returned to compliance on 11/1/04.	1 cd M/R

Exhibit 5 Total Coliform Rule Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
NONTRANSIENT NONCOMMUNITY SYSTEMS												
WV9926008	M&G Polymers USA LLC	NF	NF	NF	NF	NF	NF	3100	23	1/1/05	System did not sample TCR in 1 st quarter of 2005. State issued a violation but later rescinded the violation due to operator’s personal circumstances. The violation should have remained valid, then returned to compliance accordingly when the next sample was taken.	1 cd M/R
TRANSIENT NONCOMMUNITY WATER SYSTEMS												
WV9931009	Coopers Rock State Park	NF	NF	NF	NF	NF	NF	3100	23	9/1/04	System’s September sample exceeded holding time so system did not have a valid sample during the month. No violation was assigned.	1 cd M/R
WV9939146	Big Ds Hot Spot	NF	NF	NF	3100	23	7/1/04	NF	NF	NF	Violation in SDWIS/Fed was rescinded, however, State is having difficulty removing invalid violations from SDWIS/Fed.	1 df M/R

3100 - Total Coliform Rule

23 - M/R Routine Major

24 - M/R Routine Minor

25 - M/R Repeat Major

26 - M/R Repeat Minor

cd M/R (or MCL) - a compliance determination discrepancy

df M/R (or MCL) - a data flow discrepancy

DV - violations assessed by the data verification team

MCL - maximum contaminant level violation

M/R - monitoring and/or reporting Violation

NF - not found

Q_ - calendar quarter, 200_

STATE RECORDS - violation assigned by the state

SDWIS/FED - violations listed in SDWIS/Fed

Exhibit 6 Nitrate/Nitrite Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
WV3300315	Boone Raleigh PSD	1040	03	1/1/04	NF	NF	NF	1040	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV3301911	Green Acres MHP	1040	03	1/1/04	NF	NF	NF	1040	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV3302430	Keystone Municipal Water	1040	03	1/1/04	NF	NF	NF	1040	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV3303301	Berkeley Springs, City of	NF	NF	NF	NF	NF	NF	1040	03	7/1/03 1/1/04	Violation was issued to system for failure to complete quarterly monitoring but was later rescinded when system submitted results. However, results were submitted more than 10 days after the end of the compliance period so the violation is still valid.	2 cd M/R
WV3303613	Pendleton Co PSD (Brandywine)	1040	03	1/1/04	NF	NF	NF	1040	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV3305511	Matheny PSD	1040	03	1/1/04	NF	NF	NF	1040	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R

Exhibit 6 Nitrate/Nitrite Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
WV9933016	Great Cacapon Elementary	1040	03	1/1/04	NF	NF	NF	1040	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV9933017	Greenwood Elementary	1040	03	1/1/04	NF	NF	NF	1040	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
TRANSIENT NONCOMMUNITY WATER SYSTEMS												
WV9950010	Cabwaylingo Group Camp	1040	03	1/1/04	NF	NF	NF	1040	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV9955090	Center Food & Fuel	1040	03	1/1/04	NF	NF	NF	1040	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R

1038 - nitrate/nitrite

1040 - nitrate

01 - MCL single sample violation

02 - MCL average violation

03 - monitoring/reporting violation

04 - monitoring, check/repeat/confirmation violation

DV - violations assessed by the data verification team

cd M/R (or MCL) - a compliance determination discrepancy # df

M/R (or MCL) - a data flow discrepancy

MCL - maximum contaminant level violation

M/R - monitoring and/or reporting violation

NF - not found

Q_ - calendar quarter, 200_

R & C - reliably and consistently

SDWIS/FED - violations listed in SDWIS/Fed

STATE RECORDS - violation assigned by the state

Exhibit 7 IOC Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
WV3300315	Boone Raleigh PSD	IOC	03	1/1/04	NF	NF	NF	IOC	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV3303301	Berkeley Springs, City of	IOC	03	1/1/04	NF	NF	NF	IOC	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV3303613	Pendleton Co PSD (Brandywine)	IOC	03	1/1/04	NF	NF	NF	IOC	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
WV9913074	Seneca Trail Christian Academy	IOC	03	1/1/02	NF	NF	NF	IOC	03	1/1/02	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV9931030	Consol Loveridge Mine Miracle Run	IOC	03	1/1/04	NF	NF	NF	IOC	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV9933016	Great Cacapon Elementary	IOC	03	1/1/02	NF	NF	NF	IOC	03	1/1/02	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV9933017	Greenwood Elementary	IOC	03	1/1/02	NF	NF	NF	IOC	03	1/1/02	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R

Data Verification Final Report

1005 - arsenic
1010 - barium
1015 - cadmium
1020 - chromium
1024 - cyanide
1025 - fluoride
1035 - mercury
1045 - selenium

1074 - antimony
1075 - beryllium
1085 - thallium
1094 - asbestos
01 - MCL single sample violation
02 - MCL average violation
03 - monitoring/reporting violation
04 - monitoring, check/repeat/confirmation violation

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cd MR (or MCL) - a compliance determination discrepancy
df MR (or MCL) - a data flow discrepancy
DV - violations assessed by the data verification team
M/R - monitoring and/or reporting violation
MCL - maximum contaminant level violation
NF - not found
Q_ - calendar quarter, 200_
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 8 VOC Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
WV3303301	Berkeley Springs, City of	VOC	03	1/1/03	NF	NF	NF	VOC	03	1/1/03	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
		NF	NF	NF	NF	NF	NF	VOC	03	1/1/04	System is a surface water system that should monitor VOCs annually. System failed to monitor in 2004. No violation was assigned	1 cd M/R
WV3303613	Pendleton Co PSD (Brandywine)	VOC	03	1/1/03	NF	NF	NF	VOC	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
NONTRANSIENT NONCOMMUNITY SYSTEMS												
WV9926008	M&G Polymers USA LLC	NF	NF	NF	NF	NF	NF	VOC	03	1/1/02	MDLs for all VOCs sample analysis are above the federal detection limits. No violation was assigned. WVDHHR will put system on quarterly monitoring.	1 cd M/R
WV9931030	Consol Loveridge Mine Miracle Run	VOC	03	1/1/04	NF	NF	NF	VOC	03	1/1/04	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R

Data Verification Final Report

2378 - 1,2,4-trichlorobenzene
2380 - cis-1,2-dichloroethylene
2955 - total xylenes
2964 - dichloromethane
2968 - o-dichlorobenzene
2969 - para-dichlorobenzene
2976 - vinyl chloride
2977 - dichloroethene
2979 - trans-1,2-dichloroethylene
2980 - 1,2-dichloroethane
2981 - 1,1,1-trichloroethane
2982 - carbon tetrachloride

2983 - 1,2-dichloropropane
2984 - trichloroethylene
2985 - 1,1,2-trichloroethane
2987 - tetrachloroethylene
2989 - chlorobenzene
2990 - benzene
2991 - toluene
2992 - ethylbenzene
2996 - styrene
01 - MCL single sample violation
02 - MCL average violation
03 - monitoring/reporting violation

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04 - monitoring, check/repeat/confirmation violation
cd MR (or MCL) - a compliance determination discrepancy
df MR (or MCL) - a data flow discrepancy
DV - violations assessed by the data verification team
M/R - monitoring and/or reporting violation
MCL - maximum contaminant level violation
NF - not found
Q_ - calendar quarter, 200_
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 9 SOC Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
WV3302031	St Albans Water	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/02	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV3300512	Follansbee Hooverson Heights	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/02	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV3301010	Fayetteville Municipal Water	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/02	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV3303402	Craigsville PSD	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/04	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV3305404	Lubeck PSD	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/02	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV3300315	Boone Raleigh PSD	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/04	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R

Exhibit 9 SOC Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV3300502	Beech Bottom Water Dept	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/02	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV3301601	Moorefield Municipal Water	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/02	MDLs for one or more SOC sample analysis are above the federal detection limits for both entry points. No violation was assigned.	2 cd M/R
WV3302407	Kimball Light & Water Co - Tidewater	SOC	03	1/1/02	NF	NF	NF	SOC	03	1/1/02	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV3302430	Keystone Municipal Water	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/02	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
		NF	NF	NF	NF	NF	NF	2298	03	7/1/03 10/1/03	System had an atrazine detect in May 2003 sample. No quarterly follow-up sampling was found. No violations were assigned.	2 cd M/R
WV3303301	Berkeley Springs, City of	SOC	03	1/1/02	NF	NF	NF	SOC	03	1/1/02	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R
WV3303613	Pendleton Co PSD (Brandywine)	SOC	03	1/1/02	NF	NF	NF	SOC	03	1/1/02	Violation was issued, but was not submitted to SDWIS/Fed in a timely manner.	1 df M/R

Exhibit 9 SOC Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV3304204	Harman, Town of	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/04	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV3305521	Buckeye Wtr- Stephenson-Logan PSD	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/04	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS												
WV9902043	Faith Christian Academy	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/04	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV9923040	Arch of WV - Ruffner	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/04	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV9930015	Dingess Elementary	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/04	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R
WV9930095	Ben Creek Head Start	NF	NF	NF	NF	NF	NF	Misc SOC	03	1/1/04	MDLs for one or more SOC sample analysis are above the federal detection limits. No violation was assigned.	1 cd M/R

Data Verification Final Report

2005 - endrin
2010 - lindane
2015 - methoxychlor
2020 - toxaphene
2031 - dalapon
2032 - diquat
2033 - endothall
2034 - glyphosate
2035 - bis(2-ethylhexyl)adipate
2036 - oxamyl (Vydate)
2037 - simazine
2040 - picloram
2041 - dinoseb
2042 - hexachlorocyclopentadiene

2046 - carbofuran
2050 - atrazine
2051 - alachlor
2063 - dioxin
2065 - heptachlor
2067 - heptachlor epoxide
2105 - 2,4-d
2110 - 2,4,5-tp (Silvex)
2274 - hexachlorobenzene
2298 - bis(2-ethylhexyl)phthalate
2306 - benzo(a)pyrene
2326 - pentachlorophenol
2383 - polychlorinated Biphenyls (PCBs) - Total
2931 - dibromochloropropane

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2946 - ethylene dibromide
2959 - chlordane
01 - MCL single sample violation
02 - MCL average violation
03 - monitoring/reporting violation
04 - monitoring, check/repeat/confirmation violation
cd MR (or MCL) - a compliance determination discrepancy
df MR (or MCL) - a data flow discrepancy
DV - violations assessed by the data verification team
M/R - monitoring and/or reporting violation
MCL - maximum contaminant level violation
NF - not found
Q_ - calendar quarter, 200_
R & C - reliably and consistently
SDWIS/FED - violations listed in SDWIS/Fed
STATE RECORDS - violation assigned by the state

Exhibit 10 FBRR Violation Discrepancy Report											
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
COMMUNITY WATER SYSTEMS											
No discrepancies were identified.											
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS											
No discrepancies were identified.											

0500 - filter backwash recycling rule

39 - M/R, failure to notify state of recycling status

40 - TT, failure to recycle to approved location or capital improvements failure

cd M/R (or TT) - a compliance determination discrepancy

df M/R (or TT) - a data flow discrepancy

DV - violations assessed by the data verification team

TT - treatment technique violation

M/R - monitoring and/or reporting violation

NF - not found

Q_ - calendar quarter, 200_

R & C - reliably and consistently

SDWIS/FED - violations listed in SDWIS/Fed

STATE RECORDS - violation assigned by the state

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
WV3302031	St Albans Water	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
WV3301046	WVAWC-New River Regional Wtr Trtmt Plt	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
WV3301705	Clarksburg Water Board	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R

Exhibit 11
Stage 1 DBPR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV3300512	Follansbee Hooverson Heights	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
WV3301010	Fayetteville Municipal Water	2950	02	1/1/05	NF	NF	NF	2950	02	1/1/05	Violation of TTHM MCL was issued but was not submitted to SDWIS/Fed in a timely manner.	1 df MCL
WV3301810	Ravenswood Municipal Water Works	NF	NF	NF	NF	NF	NF	0999	27	12/1/04 2/1/05 3/1/05	Distribution system disinfectant residual not reported to state for 3 months and running annual average not calculated and reported to state. No violations were assigned.	3 cd M/R
WV3303121	Clay Battelle PSD	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV3303402	Craigsville PSD	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
		NF	NF	NF	NF	NF	NF	2920	27	9/1/04 11/1/04	In September 2004, system calculated removal ratio at 40% when it should have been 35%. In November 2004 system calculated TOC removal percentage as 35% when it should have been 33% (system did not indicate that they were using alternative compliance criteria during November). No violations were assigned.	2 cd M/R
		NF	NF	NF	NF	NF	NF	2920	27	2/1/05 3/1/05	System had treated water TOC results of “0.0” entered for February and March but someone had crossed them out and hand-entered “0.5” instead. Team calculated ratios using 0.5. System calculated ratios using “100%” as the percent removed. No violations were assigned.	2 cd M/R

Exhibit 11
Stage 1 DBPR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV3305404	Lubeck PSD	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
WV3300223	The Woods HOA	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
WV3300315	Boone Raleigh PSD	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV3300315	Boone Raleigh PSD (Continued)	NF	NF	NF	NF	NF	NF	2920	27	1/1/05 2/1/05 3/1/05	No TOC results or compliance calculations found for January, February or March 2005. No violation was assigned.	3 cd M/R
WV3300502	Beech Bottom Water Dept	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 9/1/04 11/1/04 3/1/05	Distribution system disinfectant residual not reported to state for 3 months and running annual average not calculated and reported to state. Note: results were reported as “trace” No violations were assigned.	4 cd M/R
WV3301411	Central Hampshire PSD	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
WV3301601	Moorefield Municipal Water	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R

Exhibit 11
Stage 1 DBPR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV3301911	Green Acres MHP	2950	27	1/1/04	NF	NF	NF	2950	27	1/1/04	Violations for failure to monitor for TTHMs and HAA5s issued but was not submitted to SDWIS/Fed in a timely manner.	2 df M/R
		2456	27	1/1/04	NF	NF	NF	2456	27	1/1/04		
		0999	27	4/1/04 8/1/04 11/1/04 12/1/04	NF	NF	NF	0999	27	4/1/04 8/1/04 11/1/04 12/1/04		
WV3302407	Kimball Light & Water Co - Tidewater	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 3/1/05	Distribution system disinfectant residual samples were not found for April 2004 and running annual average not calculated and reported to state. No violation was assigned.	2 cd M/R
WV3302421	City of Welch	NF	NF	NF	NF	NF	NF	2950	02	1/1/05	System exceeded the TTHMs running annual average in January 2005 with a result of 97 µg/L. No violation was assigned.	1 cd MCL
WV3302430	Keystone Municipal Water	2950	27	1/1/04	NF	NF	NF	2950	27	1/1/04	Violations for failure to monitor for TTHMs and HAA5s issued but was not submitted to SDWIS/Fed in a timely manner.	2 df M/R
		2456	27	1/1/04	NF	NF	NF	2456	27	1/1/04		

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV3302430	Kesystone Municipal Water (Continued)	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
WV3302437	Bradshaw Water Works	NF	NF	NF	NF	NF	NF	0999	27	4/1/04	Distribution system disinfectant residual samples were not found for April 2004 and running annual average not calculated and reported to state. No violation was assigned.	1 cd M/R
WV3303301	Berkeley Springs, City of	2950	03	7/1/04 10/1/04 1/1/05	NF	NF	NF	2950	27	7/1/04 10/1/04 1/1/05	Violations for failure to monitor for TTHMs and HAA5s were issued but not submitted to SDWIS/Fed in a timely manner.	6 df M/R
		2456	03	7/1/04 10/1/04 1/1/05	NF	NF	NF	2456	27	7/1/04 10/1/04 1/1/05		
		NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV3303413	Birch River PSD	NF	NF	NF	NF	NF	NF	2950	27	10/1/04 1/1/05	System exceeded MCL for TTHMs and failed to begin quarterly sampling. No violations were assigned.	2 cd M/R
		NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
WV3303613	Pendleton Co PSD (Brandywine)	2950	03	7/1/04	NF	NF	NF	2950	27	7/1/04	Violations for failure to monitor for TTHMs and HAA5s were issued but not submitted to SDWIS/Fed in a timely manner.	2 df M/R
		2456	03	7/1/04	NF	NF	NF	2456	27	7/1/04		
		NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report														
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS			
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE				
WV3303920	Newburg Water	2950	03	7/1/04	NF	NF	NF	2950	27	7/1/04	Violations for failure to monitor for TTHMs and HAA5s were issued but not submitted to SDWIS/Fed in a timely manner.	2 df M/R		
		2456	03	7/1/04	NF	NF	NF	2456	27	7/1/04				
		NF	NF	NF	NF	NF	NF	0999	27	4/1/04 3/1/05			Distribution system disinfectant residual samples were collected for April 2004 and March 2005 and running annual average not calculated and reported to state. No violation was assigned.	2 cd M/R
WV3304014	Putnam Union PSD	NF	NF	NF	NF	NF	NF	2950 2456	27 27	8/1/04 8/1/04	System failed to sample for TTHMs or HAA5s in 2004. No violations were assigned.	2 cd M/R		
		NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05			Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.	12 cd M/R
WV3304204	Harman, Town of	NF	NF	NF	NF	NF	NF	0999	27	3/1/05	Due to a data entry error in SDWIS/State, running annual average and MRDL compliance were overwritten with other data. RAA compliance was not calculated by the system or the state. No violation was assigned.	1 cd M/R		

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report											
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
WV3305511	Matheny PSD	NF	NF	NF	NF	NF	NF	2950 2456	27 27	8/1/04 8/1/04	System failed to sample for TTHMs or HAA5s in 2004. No violations were assigned.
		NF	NF	NF	NF	NF	NF	0999	27	5/1/04 6/1/04 7/1/04 8/1/04 11/1/04 3/1/05	System did not monitor for distribution system disinfectant residual samples for 6 months during the review period and running annual average not calculated and reported to state. No violations were assigned.
WV3305521	Buckeye Wtr- Stephenson- Logan PSD	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 through 3/31/05	Distribution system disinfectant residual samples were collected but due to a data entry error in SDWIS/State, monthly and running annual averages and MRDL compliance were overwritten with other data. Compliance was not calculated by the system or the state. No violation was assigned.
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS											
WV9902043	Faith Christian Academy	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 7/1/04 10/1/04 1/1/05	System did not monitor for distribution system disinfectant residual samples for 4 quarters during the review period. No violations were assigned.

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report														
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS			
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE				
WV9913074	Seneca Trail Christian Academy	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 7/1/04 1/1/05	System did not monitor for distribution system disinfectant residual samples for 3 quarters during the review period and running annual average not calculated and reported to state. No violations were assigned.	3 cd M/R		
		2950	03	1/1/04	NF	NF	NF	2950	27	1/1/04			Violations for failure to monitor for TTHM and HAA5s were issued but not submitted to SDWIS/Fed in a timely manner.	2 df M/R
		2456	03	1/1/04	NF	NF	NF	2456	27	1/1/04				
WV9913111	Greenbrier	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 7/1/04 10/1/04 1/1/05	System did not monitor for distribution system disinfectant residual samples for 4 quarters during the review period. No violations were assigned.	4 cd M/R		
WV9919005	Blue Ridge Elementary School	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	System did not monitor for distribution system disinfectant residual samples for 1 quarter during the review period and running annual average not calculated and reported to state. No violations were assigned.	1 cd M/R		
WV9919031	North Jefferson Elementary School	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	System did not monitor for distribution system disinfectant residual samples for 1 quarter during the review period. No violations were assigned.	1 cd M/R		

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV9919031	North Jefferson Elementary School (Continued)	NF	NF	NF	NF	NF	NF	0999	02	1/1/05	Running annual average of distribution system chlorine results through 3/31/05 was 4.2 mg/L, which exceeds the MRDL of 4 mg/l. No violation was assigned.	1 cd MCL
WV9919037	South Jefferson Elementary School	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	System did not monitor for distribution system disinfectant residual samples for 1 quarter during the review period and running annual average not calculated and reported to state. No violations were assigned.	1 cd M/R
WV9921022	Roanoke Elementary School	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	Distribution system disinfectant residual running annual average not calculated and reported to state. No violation was assigned.	1 cd M/R
WV9923040	Arch of WV - Ruffner	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	Distribution system disinfectant residual running annual average not calculated and reported to state. No violation was assigned.	1 cd M/R
WV9926008	M&G Polymers USA LLC	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	System did not monitor for distribution system disinfectant residual samples for 1 quarter during the review period and running annual average not calculated and reported to state. No violations were assigned.	1 cd M/R

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV9930015	Dingess Elementary	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	System did not monitor for distribution system disinfectant residual samples for 1 quarter during the review period and running annual average not calculated and reported to state. No violation was assigned.	1 cd M/R
WV9930095	Ben Creek Head Start	NF	NF	NF	NF	NF	NF	0999	27	4/1/04 7/1/04 10/1/04 1/1/05	System did not monitor for distribution system disinfectant residual samples for 4 quarters during the review period. No violations were assigned.	4 cd M/R
WV9931030	Consol Loveridge Mine Miracle Run	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	Distribution system disinfectant residual running annual average not calculated and reported to state. No violation was assigned.	1 cd M/R
		NF	NF	NF	NF	NF	NF	2920	27	1/1/05 2/1/05 3/1/05	TOC and alkalinity sample results not found for first 3 months of 2005. No violation was assigned.	3 cd M/R
WV9933016	Great Cacapon Elementary	2950	03	1/1/04	NF	NF	NF	2950	27	1/1/04	Violations for failure to monitor for TTHMs and HAA5s were issued but not submitted to SDWIS/Fed in a timely manner.	2 df M/R
		2456	03	1/1/04	NF	NF	NF	2456	27	1/1/04		
		NF	NF	NF	NF	NF	NF	0999	27	1/1/05	Distribution system disinfectant residual running annual average not calculated and reported to state. No violation was assigned.	1 cd M/R

Exhibit 11
Stage 1 DBPR Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
WV9933017	Greenwood Elementary	2950	27	1/1/04	NF	NF	NF	2950	27	1/1/04	Violations for failure to monitor for TTHM and HAA5s were issued but not submitted to SDWIS/Fed in a timely manner.	2 df M/R
		2456	27	1/1/04	NF	NF	NF	2456	27	1/1/04		
		NF	NF	NF	NF	NF	NF	0999	27	1/1/05		
WV9950025	Dunlow Elementary	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	Distribution system disinfectant residual running annual average not calculated and reported to state. No violation was assigned.	1 cd M/R
WV9951016	Hacker Valley Elementary	NF	NF	NF	NF	NF	NF	0999	27	1/1/05	Distribution system disinfectant residual running annual average not calculated and reported to state. No violation was assigned.	1 cd M/R
WV9951025	ICG Eastern, LLC-Birch River Mine	2950	27	1/1/04	NF	NF	NF	2950	27	1/1/04	Violations for failure to monitor for TTHMs and HAA5s were issued but not submitted to SDWIS/Fed in a timely manner.	2 df M/R
		2456	27	1/1/04	NF	NF	NF	2456	27	1/1/04		
		NF	NF	NF	NF	NF	NF	0999	27	1/1/05		
											Distribution system disinfectant residual running annual average not calculated and reported to state. No violation was assigned.	1 cd M/R

Exhibit 11 Stage 1 DBPR Violation Discrepancy Report											
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
TRANSIENT NONCOMMUNITY WATER SYSTEMS											
No discrepancies were identified.											

*0999 - chlorine**1006 - chloramine**1008 - chlorine dioxide**1009 - chlorite**1011 - bromate**2456 - haloacetic acids**2920 - total organic carbon (TOC)/alkalinity**2950 - total trihalomethanes**01 - MCL single sample 02 - MCL average violation**11 - maximum disinfectant residual level violation, acute or non acute**27 - monitoring/reporting (DBP)**# cd MR (or MCL) - a compliance determination discrepancy**# df MR (or MCL) - a data flow discrepancy**DV - violations assessed by the data verification team**MCL - maximum contaminant level violation**M/R - monitoring and/or reporting violation**NF - not found**Q_ - calendar quarter, 200_**R & C - reliably and consistently**SDWIS/FED - violations listed in SDWIS/Fed**STATE RECORDS - violation assigned by the state*

Exhibit 12
Radiological Violation Discrepancy Report

PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
COMMUNITY WATER SYSTEMS											
No discrepancies were identified.											

4000 - gross alpha

4010 - combined radium (-226 & -228)

01 - MCL single sample violation

02 - MCL average violation

03 - monitoring/reporting violation

04 - monitoring, check/repeat/confirmation violation

DV - violations assessed by the data verification team

cd MR (or MCL) - a compliance determination discrepancy

df MR (or MCL) - a data flow discrepancy

MCL - maximum contaminant level violation

M/R - monitoring and/or reporting violation

NF - not found

Q_ - calendar quarter, 200_

R & C - reliably and consistently

SDWIS/FED - violations listed in SDWIS/Fed

STATE RECORDS - violation assigned by the state

Exhibit 13 LCR Violation Discrepancy Report												
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS	
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE		
COMMUNITY WATER SYSTEMS												
WV3302080	Kanawha County RDA	Pb90	.002	7/29/02	NF	NF	NF	Pb90	.002	7/29/02	90 th percentile lead results for systems serving populations of more than 3,300 persons not reported to SDWIS/Fed.	1 df M/R
WV3305404	Lubeck PSD	PB90	ND	8/4/03	NF	NF	NF	PB90	ND	8/4/03	90 th percentile lead results for systems serving populations of more than 3,300 persons not reported to SDWIS/Fed.	1 df M/R
WV3300315	Boone Raleigh PSD	5000	52	10/1/04	5000	52	10/1/04	5000	52	10/1/03	System monitored for the LCR 9/27/00 and was due to monitor again in 2003 but failed to do so. State assigned the violation begin date as 10/1/04. The team believes the violation begin date should be the first day after the end of the compliance period which is 2003. Wrong violation date assigned.	1 cd M/R
WV3301601	Moorefield Municipal Water	NF	NF	NF	NF	NF	NF	5000	52	10/1/02	System sampled 10/7/99. Next sample due in 2002 but system did not sample until 8/5/03. No violation was assigned.	1 cd M/R
WV3301736	East View PSD	NF	NF	NF	NF	NF	NF	5000	52	10/1/03	System sampled 7/11/00. Next sample due in 2003 but system did not sample. No violation was assigned.	1 cd M/R

Exhibit 13 LCR Violation Discrepancy Report											
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
WV3301911	Green Acres MHP	5000	52	10/1/04	5000	52	10/1/04	5000	52	10/1/03	System monitored for the LCR 9/21/00 and was due to monitor again in 2003 but failed to do so. State assigned the violation begin date as 10/1/04. The team believes the violation begin date should be the first day after the end of the compliance period which is 2003. Wrong violation date assigned.
WV3302430	Keystone Municipal Water	5000	52	10/1/04	5000	52	10/1/04	5000	52	10/1/02	System monitored for the LCR 12/18/02 (not in "summer months"). State assigned the violation begin date as 10/1/04. The team believes the violation begin date should be the first day after the end of the compliance period which is 2002. Wrong violation date assigned.
WV3303031	Mingo County PDS Pigeon Creek	5000	52	1/1/04	5000	52	1/1/04	NF	NF	NF	System was new in 2003. Was scheduled to begin initial LCR monitoring in 2004. System has not completed any monitoring to date and state issued a "51" violation for 1/1/05 which is correct. However, no other violations should have been issued, as system is out of compliance until it completes initial sampling. "52" violation of 1/1/04 issued in error.

Exhibit 13 LCR Violation Discrepancy Report											
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
WV3303104	Chaplin Hill Water Assoc	NF	NF	NF	NF	NF	NF	5000	52	10/1/04	System sampled for the LCR 6/29/04 but did not report the results to the state until 3/28/05. State assigned a violation then rescinded the violation when the sample was received, as per state policy. The state should not have rescinded the violation as the results were reported more than 10 days after the end of the compliance period.
WV3303301	Berkeley Springs, City of	NF	NF	NF	5000	52	10/1/04	5000	52	10/1/04	System sampled 9/25/04 but sample was not received by state until 4/15/05 at which time the state rescinded the violation. The state should not have rescinded the violation as the results were reported more than 10 days after the end of the compliance period.
		NF	NF	NF	NF	NF	NF	5000	52	1/1/01	System failed to complete triennial sampling in 2001. No violation was assigned.
WV3303413	Birch River PSD	NF	NF	NF	NF	NF	NF	5000	52	10/1/02	System was instructed to take 10 samples instead of 5 in the 2002 sampling round because the population served went over 500 persons. System failed to increase sampling and no violation was assigned.

Exhibit 13 LCR Violation Discrepancy Report											
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
WV3304204	Harman, Town of	NF	NF	NF	NF	NF	NF	5000	52	1/1/01	System sampled in August 1998 and not again until July 2002, more than 3 years apart. No violation was assigned.
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS											
WV9913074	Seneca Trail Christian Academy	5000	52	10/1/04	5000	52	10/1/04	5000	52	10/1/03	System failed to monitor for LCR in 2003. State assigned the violation begin date as 10/1/04. The team believes the violation begin date should be the first day after the end of the compliance period which is 2003. Wrong violation date assigned.
WV9919031	North Jefferson Elementary School	NF	NF	NF	NF	NF	NF	5000	52	10/1/02	System sampled its most recent triennial round 9/21/02 but state did not receive the sample results until 4/16/03. Violation was invalidated when samples were received but team believes the violation should stand.
WV9930015	Dingess Elementary	NF	NF	NF	NF	NF	NF	5000	52	1/1/01	System sampled its 2001 triennial round 5/8/01 (not in summer months) No violation was assigned.
WV9950025	Dunlow Elementary	NF	NF	NF	NF	NF	NF	5000	52	10/1/03	System sampled 9/7/00 and not again until 9/14/04, more than 3 years apart. No violation was assigned.

Data Verification Final Report

West Virginia Department of Health and Human Resources

51 - initial monitoring violation

52 - follow-up/routine monitoring violation

53 - initial water quality parameters violation

56 - initial source water samples violation

*57 - source water treatment recommendation violation
or corrosion control treatment recommendation/study
violation*

58 - corrosion control treatments installation violation

65 - public education violation

ALE - action level exceedance

AO - administrative order

Cu - copper

DV - violations assessed by the data verification team

NF - not found

Pb - lead

PE - Public Education

PN - public notification

SDWIS/FED - violations listed in SDWIS/Fed

STATE RECORDS - violation assigned by the state

Exhibit 14 SWTR Violation Discrepancy Report															
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS				
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE					
COMMUNITY WATER SYSTEMS															
No discrepancies were identified.															
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS															
No discrepancies were identified.															
TRANSIENT NONCOMMUNITY WATER SYSTEMS															
WV9931009	Coopers Rock State Park		NF	NF	NF		0200	36	5/1/04		NF	NF	NF	System has a violation in SDWIS for failure to monitor turbidity and/or entry point chlorine residual in May 2004 but team found data for May and determined violation to be invalid.	1 cd M/R
			NF	NF	NF		NF	NF	NF		0200	36	7/1/04	System failed to monitor turbidity and/or entry point chlorine residual in July 2004. No violation was assigned.	1 cd M/R

0200 - surface water treatment rule

01 - MCL single sample violation

02 - MCL average violation

07 - treatment technique

31 - monitoring, routine/repeat (unfiltered)

36 - monitoring, routine/repeat (filtered)

41 - treatment technique

42 - failure to filter

DV - violations assessed by the data verification team

cd MR (or MCL) - a compliance determination discrepancy

df MR (or MCL) - a data flow discrepancy

MCL - maximum contaminant level violation

M/R - monitoring or reporting violation NF - not found

Q_ - calendar quarter, 200_

R & C - reliably and consistently

SDWIS/FED - violations listed in SDWIS/Fed

STATE RECORDS - violation assigned by the state

Exhibit 15 IESWTR Violation Discrepancy Report											
PWSID	SYSTEM NAME	STATE RECORDS			VIOLATIONS SDWIS/FED			VIOLATIONS DV			COMMENTS
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	
COMMUNITY WATER SYSTEMS											
No discrepancies were identified.											

0300 - interim enhanced surface water treatment rule
 29 - response to individual filter trigger monitoring
 and reporting
 37 - failure to profile or consult with state
 38 - M/R IESWTR
 43 - treatment technique, exceedance of 1 NTU
 44 - treatment technique, >5% exceed .3 NTU

47 - treatment technique, construction of uncovered finished
 storage facility
 48 - treatment technique, failure to meet Cryptosporidium site
 specific conditions
 DV - violations assessed by the data verification team
 # cd MR (or MCL) - a compliance determination discrepancy
 # df MR (or MCL) - a data flow discrepancy

MCL - maximum contaminant level violation
 M/R - monitoring or reporting violation NF - not found
 Q_ - calendar quarter, 200_
 R & C - reliably and consistently
 SDWIS/FED - violations listed in SDWIS/Fed
 STATE RECORDS - violation assigned by the state

Exhibit 16 Public Notification Discrepancy Report														
PWSID	SYSTEM NAME	STATE RECORDS			SDWIS/FED			DV			Related Violation and Date	COMMENTS		
		CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE	CHEM ID	VIO TYPE	DATE				
COMMUNITY WATER SYSTEMS														
WV3302421	City of Welch	NF	NF	NF	NF	NF	NF	7500	75	2/10/05	2950-02 1/1/05	System exceeded the TTHM running annual average in January 2005 with a result of 97 µg/L. No public notification was found. No violation was assigned	1 cd M/R	
WV3302430	Keystone Municipal Water	NF	NF	NF	NF	NF	NF	7500	75	2/10/05	3100-22 6/1/04	System had a TCR MCL exceedance in June 2005 and system failed to perform public notification. No violation was assigned.	1 cd M/R	
NONTRANSIENT NONCOMMUNITY WATER SYSTEMS														
No discrepancies were identified.														
TRANSIENT NONCOMMUNITY WATER SYSTEMS														
No discrepancies were identified.														

01 - MCL single sample violation

02 - MCL average violation

03 - monitoring/reporting violation

04 - monitoring, check/repeat/confirmation violation

05 - notification, state

06 - notification, public

07 - treatment technique

DV - violations assessed by the data verification team

cd MR (or MCL) - a compliance determination discrepancy

df MR (or MCL) - a data flow discrepancy

MCL - maximum contaminant level violation

M/R - monitoring and/or reporting violation

NF - not found

Q_ - calendar quarter, 200_

R & C - reliably and consistently

SDWIS/FED - violations listed in SDWIS/Fed

SFJ - state formal notice of violation

SFK - bilateral compliance agreement signed

SFL - state administrative order (without penalty) issued

SFM - state administrative penalty assessed

SFO - state administrative order (with penalty) issued

SO+ - no additional formal action needed

SO6 - intentional no-action

STATE RECORDS - violation assigned by the state

Appendix D

WVDHHR Monitoring Waiver Information



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

JUL 07 1995

Mr. Donald A. Kuntz, P.E., Director
Office of Environmental Health Services
Morrison Building, 4th Floor
815 Quarrier Street
Charleston, WV 25301

Dear Mr. Kuntz:

The U.S. Environmental Protection Agency (EPA) is pleased to inform you that the West Virginia Department of Health and Human Resources' (WVDHHR) revisions to the State's Phase II/V Rule Waiver Strategy have been approved.

EPA congratulates the Department on the completion of this revision to the Public Water System Supervision (PWSS) program, and looks forward to working with your staff in implementing the waiver strategy during the coming years.

Sincerely,

A handwritten signature in cursive script, appearing to read "Stuart Kerzner".

Stuart Kerzner, Chief
Drinking Water/Ground Water
Protection Branch



***WEST VIRGINIA PUBLIC WATER SYSTEM
PHASE II/IIB/V MONITORING WAIVER STRATEGY***



***WEST VIRGINIA DEPARTMENT OF HEALTH AND HUMAN RESOURCES
WEST VIRGINIA BUREAU FOR PUBLIC HEALTH
OFFICE OF ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL ENGINEERING DIVISION***

June 27, 1995

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

INTRODUCTION:

The purpose of this document is to describe how West Virginia will issue waivers under the Phase II/V Rule for Volatile Organic Chemicals (VOCs), Pesticides, PCBs, Asbestos and Unregulated Synthetic Organic Compounds (SOCs). Each waiver(s) is described and requirements for issuing waivers are outlined for each eligible chemical that may be waived for monitoring. Waiver issuances for both surface water and ground water sources is described. **There is no provision for granting waivers for Inorganic Chemicals (IOCs).**

The Phase II/V Rule includes provisions for allowing previous sampling data to be used to satisfy the systems initial sampling requirement. It also allows West Virginia Bureau for Public Health to grant waivers from monitoring requirements based on vulnerability assessments which indicate the source(s) is not vulnerable. The reduction in sampling frequency from the base requirements should result in significant cost savings while promoting source protection.

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

USE AND SUSCEPTIBILITY CRITERIA:

Use Waiver

The U.S. EPA considers that the "use" waiver will apply primarily to pesticides and PCBs due to the wide spread use of VOCs in the United States. As a result, this document will address only pesticides and PCBs with respect to the "use" waiver. Although the possibility of using "use" waivers for VOCs is a future option.

The term pesticide is applied to any chemical that is used for the purpose of eradication or control of any pest, including insects, plants and animals. The U.S. EPA has defined "use" as "...the application, storing, distributing, disposing, or transporting..." of a pesticide in the area. This definition is intentionally broad enough to account for any possible method(s) through which a pesticide might enter ground water. Although contamination of ground water by pesticides is often perceived as being associated with the application of chemicals at the surface, often the most frequent case of contamination is by accidental spills, poor management and improper disposal.

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

Susceptibility Waiver

The "susceptibility" of an aquifer relates to the probability of an introduced contaminant to travel from the surface to ground water. Susceptibility of an aquifer to contamination will be influenced by the hydrogeologic characteristics of the soil and vadose zone (the unsaturated geologic materials between the surface and the aquifer) and the chemical characteristics of the specific contaminant.

Important hydrogeologic controls include the thickness of the soil zone, the depth to the aquifer, the permeability of the soil and vadose zones, the presence or absence of low permeability layers between the surface and the aquifer, and the organic content of the soil. These factors will strongly influence how readily water at the surface will infiltrate and percolate downward toward the aquifer. Because these factors are dependent solely on the geology of a given location, they will be the same for all contaminants at that site.

Whether or not a contaminant is carried with the infiltrating water down to the aquifer depends on that contaminant's specific chemical characteristics. These include volatility (how readily it escapes to the atmosphere), solubility (how readily it dissolves in water), its organic carbon partition coefficient [Koc] (how strongly it is attached, or absorbed, onto organic matter in the soil), and the

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

contaminant's half-life (related to how long it will survive before being transformed into another chemical). These parameters differ for each contaminant and, as a result, each must be evaluated independently.

AREA WIDE WAIVERS:

The U.S. EPA allows States to propose area wide waivers based on geographic vulnerability assessments. Accordingly, we are proposing waivers for the following Phase II/V contaminants:

Dioxin

Potential sources of Dioxin are not as widespread as those for other Phase II/V contaminants. Any system within a 2,000 foot radius of a past and/or present source of dioxin contamination will be considered vulnerable unless otherwise documented not to be vulnerable, and will be required to monitor for dioxin. Systems which have previously found Dioxin are to immediately contact the Bureau for Public Health so the findings can be reviewed and evaluated to establish a monitoring program. The state's district engineering staff will be instrumental in working with such systems.

This policy will be in effect for the first three (3) year monitoring compliance cycle which ends December 31, 1995. West

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

Virginia along with the USEPA - Region III and the other Region III states, have entered into an agreement whereby a study of the region will be conducted to gain more information on the prevalence of dioxin and asbestos relative to water supplies. After the study is complete, the state will review and/or revise its strategy accordingly. In addition, the state staff will place a high priority on evaluating systems which are the most susceptible to possible dioxin exposure.

An area wide waiver to reduce or eliminate the requirements for dioxin monitoring in ground and surface waters is being permitted because research indicates it is extremely immobile. EPA's assertion in the Health Advisory for dioxin that: "TCDD has not been included in drinking water surveys. Given its limited solubility, it is not expected to occur at detectable levels in either ground or surface water." supports West Virginia's position.

Asbestos

The possible conditions contributing to asbestos in drinking water are asbestos cement pipe (AC pipe), corrosive water and natural deposits of asbestiform minerals. Systems will be exempt from monitoring for asbestos fibers in their water if they [1] document that they do not utilize AC pipe anywhere in their distribution system, and [2] are outside regions of known or suspected occurrences of asbestiform minerals.

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

Asbestiform minerals are associated with specific rock types found in only a few geologic terrains. Most commonly, these are metamorphic rocks such as serpentine. In West Virginia, such terrains are not found.

If asbestos cement pipe is being used, the public water system will be eligible for a waiver provided they have had no exceedance under the Lead and Copper Rule and/or the Langelier Index is equal to or greater than -1.0. If they have an exceedance in the Lead and Copper Rule and/or the Langelier Index is less than -1.0, routine monitoring will be required unless the Langelier Index is subsequently adjusted to more than -1.0.

Pesticides

Glyphosate

An area wide waiver to eliminate the requirements for Glyphosate monitoring in ground and surface waters is permitted because of its immobility and relatively low persistence. Should Glyphosate occur in raw water, chlorination in the treatment process will oxidize it. All public water supplies in West Virginia are required to chlorinate; therefore, health problems associated with Glyphosate are not foreseen.

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

Diquat

An area wide waiver eliminating the requirements for Diquat monitoring in ground and surface waters is permitted because it readily binds to clay particles, is absorbed by aquatic plants, is rapidly degraded by sunlight and is rendered biologically unavailable in clay soils. Most soils in West Virginia contain a high percentage of clay. Therefore, health problems associated with Diquat are not foreseen. However, Diquat monitoring may be required at specific sites where past and/or present activities or information indicate a high probability of its occurrence.

Endothall

An area wide waiver eliminating the requirements for Endothall monitoring in ground and surface waters is permitted because of its immobility and relatively low persistence. However, Endothall monitoring may be required at specific sites where past and/or present activities or information indicate a high probability of its occurrence.

SOURCE SPECIFIC WAIVERS:

Determination of vulnerability to SOCs, VOCs and pesticides contamination is an option available to both ground and surface water sources. Because of the different nature of these two sources, however, the area over which the study is directed differs

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

markedly between the two. **NOTE:** Initial sampling must be undertaken before any source specific waivers are granted. The number of persons served by the system and the proximity of small systems to larger ones will not be considered when determining vulnerability to VOCs.

Surface Water

In general, public water systems that derive their water from surface water intakes are not directly tapping into an aquifer. As a result, aquifer susceptibility will not be an option in most cases. The principle factor used to evaluate the vulnerability of a surface water source, will be the determination of SOC's use in the area that contributes water to the system. This process will require the delineation of the surface water watershed.

A watershed is the land surface that serves as a catchment for precipitation that is not otherwise stored, evaporated, used in plant growth, infiltrated to ground water and is directed down slope, eventually contributing to stream flow. The delineation of a watershed is commonly done by defining the topographic divides that surround the stream and its tributaries which supply the water system.

A similar approach should be taken for lake sources. Using a topographic map as a base, draw a line to separate drainage flowing

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toward the lake from drainage flowing away from the lake.

Within the boundaries of a topographically defined watershed, the flow of water at or very near the surface will be such that any surface contamination encountered may be transported to the area of the surface water intake. Within a watershed, shallow ground water may also contribute to stream flow. This base flow maintains perennial streams with water during periods of limited rainfall. In some areas of the United States, surface water has become contaminated as a result of base flow from ground water itself carrying a contaminant load.

SOCs use will be determined within the topographic limits of the watershed unless evidence is presented that supports using only a portion of the watershed (see below). In those areas where aerial spraying of pesticides occurs just outside the watershed area it is possible that prevailing winds at the time of spraying and/or small droplet size and aerial drift might allow for a portion of the applied pesticide to enter the watershed. Under these conditions, the West Virginia Bureau of Public Health may not grant a waiver for those pesticides unless the applicator's records indicate that spray drift would not have impacted the watershed.

Systems drawing water from surface water sources with a large watershed may be able to demonstrate that only a portion of that

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watershed need be inventoried to reliably assess potential contamination. The potential of progressive dilution of a contaminant in the downstream direction as a result of increased discharge and dispersion may be considered. Systems are encouraged to present evidence based on discharge rate, water velocity and dispersion coefficients to demonstrate that a contaminant introduced at a realistic concentration at some distance upstream from the intake will be diluted to below detection limits by the time the intake is reached. The West Virginia Bureau for Public Health will review that information to determine if the modeled distance can be taken as an upstream limit.

Ground Water

West Virginia has approximately 600 community and non-community non-transient public water supplies deriving their source from ground water. Supplies draw from water wells, springs or abandoned coal mines. Pro-active protection for ground water is demonstrated in the implementation of the West Virginia Wellhead Protection Program. The U.S. Environmental Protection Agency approved the state program December 17, 1992. Since implementation of the program, many supplies have wellhead protection areas delineated and a number of local wellhead protection programs have been approved. Many water supplies have completed the detailed potential contamination activities survey for their unique wellhead protection area. The comprehensive survey examines each parcel of

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real estate for past, present or proposed land use and a record is maintained for future reference. Therefore, in the determination of SOCs, VOCs and pesticide use, the area of investigation is limited to the delineated wellhead protection area. With the state program still in its infancy, many supplies do not have delineated wellhead protection areas. A circle with a 2,000 feet radius will be demarcated around each ground water source as an interim wellhead protection area for the purpose of implementing the waiver strategy.

The geology of West Virginia is very complex with varying degrees of vulnerability. The Wellhead Protection Program adopted a DRASTIC interpretive index to prioritize implementing the program across the state with most vulnerable alluvium and karst topography receiving highest priority and the horizontal sandstone the state's lowest ranking.

This DRASTIC interpretive method to prioritize vulnerability evaluations is applicable to susceptibility and will be utilized in the waiver strategy for susceptibility determination. During the evaluations, all available information such as STATSCO and/or other pertinent software, maps, local information, etc. will be sought and considered for the assessments. West Virginia does not have expansive sole source aquifers. Topography dictates most of the aquifer systems and is unrelated to the geology. Using the

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

vulnerability index described above, large areas can be identified for the determination of SOC's use, present and past. Information concerning regional pesticide and SOC's use has been obtained from the West Virginia Department of Agriculture and documented reports are available from the United States Geological Survey concerning water well quality surveys conducted throughout the state. Elevated nitrate levels can also be used as a possible indication of the presence of SOC's.

1. **Water Wells:** The region of concern for susceptibility should reflect that area on the surface where water, percolating from the surface down to the aquifer, will eventually reach the well. The shape of the recharge area varies from circular to elongated, from narrow to wide, depending on the aquifer properties, the ground water gradient, aquifer boundaries and pumping conditions. Consideration of a delineated well recharge area is preferred for evaluating the potential of contamination from fixed sites, e.g. landfills, industrial waste discharge, underground storage tanks. However, it does not adequately address the assessment of pesticide use, as crops are not fixed features. It is good agricultural management to rotate crops with time. Consequently, current crops grown and pesticides used in the recharge area may not reflect all past pesticides used.

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After use some pesticides (and other SOC's) may persist for a number of years in the environment and their time of travel through the soil and vadose zones may be measured in decades. Therefore, in order to approximate historic pesticide use, it is necessary to choose an area for SOC's inventory that "captures" the variability of crop rotation in the area. A circle with a radius of 2,000 feet, centered on the wellhead, will represent the area in which pesticide use will be determined. This radius reflects our estimate of the distance from the wellhead necessary to represent the diversity of crop rotation practices. This radius will be applied to all systems unless they are in karst areas or they can demonstrate that the agricultural practices in specific areas require a circle of different dimension. If systems use more than one well, each well will have to be evaluated for pesticide use within 2,000 feet of the wellhead.

2. **Springs:** For those systems that derive their water from developed springs, the area of SOC's inventory will be equivalent to a circle with 2,000 feet radius, centered on the spring location except for karst areas. Susceptibility analysis for springs will require that the recharge area of the spring be delineated. It is a common, but often erroneous assumption, that the spring recharge area is coincident with the surface water watershed in which the spring is located.

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Delineation of the recharge area for a spring will require that the geologic control that localizes the spring be identified and mapped.

3. **Hydraulic Connection:** Public Water Supplies producing from ground water that has been determined to be in hydraulic connection with surface water will use the watershed area of the surface water body as the area of SOC's inventory (see "Surface Water" above). Hydraulic connection implies that a transfer of water from the surface water to the aquifer providing water to the well is possible. Note that hydraulic connection is not the same as "direct influence of surface water." The latter term implies the potential for movement of microorganisms such as bacteria, viruses, giardia and cryptosporidium, into the well water. Hydraulic connection relates to water movement and, as a result, the potential of dissolved constituents, including contaminants, getting into the well.

West Virginia Bureau of Public Health is developing the procedures for identifying systems where a ground water source is in hydraulic connection with surface water. These are briefly discussed in the susceptibility section.

WEST VIRGINIA PUBLIC WATER SYSTEM WAIVER STRATEGY

ADMINISTRATIVE PROCEDURES FOR REVIEWING, APPROVING AND DOCUMENTING

WAIVER DECISIONS:

Public Water Systems must request a waiver from the West Virginia Bureau for Public Health, Environmental Engineering Division - Central Office.

The Environmental Engineering Division District Office staff will conduct vulnerability assessments which shall include assessing the Wellhead Protection Area, evaluating well construction, geological and analytical data and sources of contamination for ground water systems and assessing the watershed area, evaluating geological and analytical data, and sources of contamination for surface water systems. The District staff will document all findings on the Public Water System Vulnerability Assessment Checklist (Attachment 1) and make recommendations to the Central Office regarding waiver eligibility.

The Central Office will evaluate the Public Water System Vulnerability Assessment Checklist, District staff recommendations, previous monitoring, all available information and other documentation in the files and issue or deny a waiver. The Central Office will then prepare individual monitoring schedules based on the waiver decisions and forward copies to both the District Office and the water system.

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The District Office will be responsible for maintaining documentation on waiver information, monitoring schedules and waiver renewal schedules. Prior to waiver expiration the District Office will re-assess the water system vulnerability and submit another Public Water System Vulnerability Assessment Checklist to the Central Office.

The Central Office will evaluate the updated Public Water System Vulnerability Assessment Checklist and any information that has changed since the last waiver and either issue or deny the waiver renewal. The Central Office will also prepare the new monitoring schedule and forward copies to both the District Office and the water system.



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Gaston Caperton
Governor

MEMORANDUM

TO: All Environmental Engineering Staff

FROM: Donald A. Kuntz, P.E., Director
Environmental Engineering

DATE: July 21, 1993

RE: Guidance Memorandum 6
Vulnerability Assessments

The Phase II, IIB and V Rules of the "Public Water System Regulations" permits reduced monitoring for a number of unregulated and regulated organics for systems under certain conditions approved by the State. In all cases, to reduce monitoring, a vulnerability assessment of the public water supply must be conducted. Vulnerability assessments will become a major element in the Division's overall waiver strategy to reduce monitoring requirements for public water systems wherever possible. Reduced monitoring, which may be allowed as a result of a vulnerability assessment, will be in addition to reduced monitoring requirements available under the use and susceptibility "Phase II/V Monitoring Waiver Strategy." The "strategy" is currently being reviewed by the EPA for final approval.

In conducting a vulnerability assessment, it is important to determine the degree of protection afforded the public water supply source and consider the location, construction, operation and any other protection provided. The proximity and impact of disposal and storage sites for organic and inorganic chemicals must be evaluated. In most cases one round of sampling analyses may have to be completed to determine if any of the contaminants of concern are detectable. As the average size of a wellhead protection area has approximately been determined to be an area covering a 2000 ft. radius of the well, it will be policy to survey potential sources of contamination to determine if such sites may influence the water source within an area defined by a 2000 ft. radius around a well. In cases where well supply systems have had a wellhead protection area delineated that criteria shall be used in place of the 2000 ft. radius. For surface water supplies one must evaluate the entire upstream watershed area to determine vulnerability. Due to the generally larger watershed areas and greater probability of upstream activities which might adversely impact water quality, extreme care must be exercised in considering a vulnerability assessment.

When evaluating systems to assess vulnerability for reduced monitoring, a written memorandum of justification must be developed by the district office

for approval by the central office. The memorandum must include findings of the survey and the rationale used in determining vulnerability. Copies of topographical maps, laboratory results and other documentation that may be germane should be included. A completed vulnerability assessment form (copy attached) should also be included with the memorandum as part of the documentation. Some or all of the required monitoring may be reduced depending upon findings of the vulnerability assessment. The goal of the Division's vulnerability/waiver policy is to minimize wherever possible the financial impact of the regulatory requirements upon water systems, without compromising public health.

[]1 Original []2 Renewal

7/94

West Virginia Bureau of Public Health
Environmental Engineering Division

Public Water System

Vulnerability Assessment

Groundwater/Surface Water Sources

PWSID# _____ County _____ Telephone _____

System Name _____

System Address _____

Source: []1 S (surface) if, No. 4 - type: []1 Well Plant Classification: []1 ID
[]2 P (purchase (s)) []2 Spring []2 I
[]3 W (purchase (g)) []3 Mine or Quarry []3 II
[]4 G (ground) []4 Ranney well []4 III
[]5 I ((g) under the influence) []5 Infiltration gallery []5 IV

Source Location: Latitude N ____° ____' ____" Longitude W ____° ____' ____" ADDITIONAL ON BACK - MARK BOX []

If ground source, is location less than 200' from surface water body? []1 Yes []2 No

Description: _____

Comments:

1. Has sanitary survey been conducted? []1 Yes []2 No

2. Wellhead Protection Program initiated? []1 Yes []2 No

3. If comment 2 is yes, is Wellhead Protection Area (WHPA) delineated? []1 Yes []2 No

4. If comment 3 is yes, is Potential Contamination Source Survey completed? []1 Yes []2 No

5. If ground source, is well/spring of sanitary construction? []1 Yes []2 No

6. Type of vulnerability from interpretive index map []1 high
[]2 moderate - high
[]3 moderate - low
[]4 low

7. If comment 4 is blank or no, MARK ATTACHED CHECKLIST OF POTENTIAL CONTAMINATION ACTIVITIES & MARK BOX [].

8. Contamination monitoring analysis - MCL violations []1 Yes []2 No

9. If comment 8 is yes, list MCL violation by code - []1 VOC _____

[]2 SOC _____

[]3 Pesticide _____

[]4 Inorganic _____

[]5 Other _____

10. Bacteriological raw water quality - any significant change in last 3 years []1 Yes []2 No

11. Average total coliform count _____.

12. Additional comments _____

13. RECOMMENDATION: []1 VULNERABLE []2 NON-VULNERABLE

ASSESSOR: _____ DATE: _____

SIGNATURE

PRINT NAME

CHECKLIST FOR POTENTIAL CONTAMINANT ACTIVITY AND LOCAL LAND USE

LAND USE/ SOURCE	NAME	LOCATION	DISTANCE FROM WATER SOURCE
1. ABANDONED WELLS			
2. AIRPORTS			
3. ANIMAL WASTES, FEEDLOTS			
4. AUTO REPAIRS			
5. CAVES, SINKHOLES			
6. CEMETERIES			
7. CHEMICAL PLANT			
8. CHEMICAL STORAGE			
9. DRY CLEANERS			
10. ELECTROPLATING, METAL FINISHING			
11. FARM MACHINERY, CHEMICALS			
12. FOOD PROCESSING			
13. FUEL DEPOTS			
14. FUNERAL HOMES, GRAVEYARDS			
15. FURNITURE, BOAT FINISHING			
16. GOLF COURSE, NURSERY			
17. GLASS MANUFACTURING			
18. HAZARDOUS WASTE SITES			
19. HOSPITAL, VETERINARY			
20. INDUSTRIAL WASTE SITES			
21. LABORATORIES			
22. LAND APPLIED SLUDGE			
23. LANDFILLS			
24. MACHINE SHOPS			
25. MEAT PROCESSING			

CHECKLIST FOR POTENTIAL CONTAMINANT ACTIVITY AND LOCAL LAND USE

LAND USE/ SOURCE	NAME	LOCATION	DISTANCE FROM WATER SOURCE
26. MINING WASTES			
27. OIL & GAS PRODUCTION			
28. PLASTIC MANUFACTURING			
29. PAINT MANUFACTURING			
30. PESTICIDE MFG. FORMULATION			
31. PESTICIDE APPLICATION			
32. PHOTO PROCESSING			
33. PIPELINE, POWERLINE RIGHT OF WAYS			
34. PRINTERS			
35. PULP, PAPER MANUFACTURING WASTES			
36. QUARRIES			
37. RAILROAD TRACKS, YARDS			
38. ROAD SALT STORAGE			
39. RUBBER MANUFACTURING			
40. SALVAGE YARD			
41. SAND AND GRAVEL PRODUCTION			
42. SEPTIC TANKS, SEWER LINES			
43. UNDERGROUND INJECTION WELLS			
44. UNDERGROUND STORAGE TANKS			
45. WOOD PRESERVING FACILITIES			
46. OTHER			
47. OTHER			
48. OTHER			
49. OTHER			
50. OTHER			

PUBLIC WATER SYSTEM SUPERVISION PROGRAM KEY TO INTERPRETING FRDS REPORTS

CONTAMINANT CODES

R = REGULATED M = MONITORING ONLY

0100	TURBIDITY	R	1078	BISMUTH TOTAL	2039	DI (ETHYLHEXYL) PHTHALATE
0102	ALUMINUM	R	1079	BORON TOTAL	2040	PICLORAM
0103	NITROGEN-AMMONIA AS (N)	R	1080	CHROMIUM HEX	2041	DINOSER
0104	ARSENIC	R	1081	CONALT TOTAL	2042	HEXACHLOROCTCLOPENTADIENE
0105	CHLORAMINE		1082	IRON DSS	2043	ALDICARB SULFOXIDE
0106	CHLORATE		1083	LITHIUM TOTAL	2044	METOLACHLOR
0107	CHLORINE DIOXIDE		1084	MOLYBDENUM TOTAL	2045	CARBORURAN
0108	CHLORITE	R	1085	THALLIUM TOTAL	2046	ALDICARB
0109	BARIUM	R	1086	TIN TOTAL	2047	HYPOCHLORITE ION
0110	RESIDUAL CHLORINE	R	1087	TITANIUM TOTAL	2048	1,4 DIOXANE
0111	CALCIUM	R	1088	VANADIUM TOTAL	2049	ATHAZINE
0112	CALCIUM	R	1089	WGAJ	2050	ALACHLOR (CLASS)
0113	CHLORIDE	R	1090	OLIGOMERASE, TOTAL	2051	EPIC (EPTAM)
0114	CARBON, TOTAL	R	1091	800, 3-DAY MDI	2052	BUTYLATE (BUTAM)
0115	CHROMIUM	R	1092	700 MDI	2053	CYANACNE (BLADEQ)
0116	HYDROGEN SULFIDE	R	1093	PHOSPHORUS-TOTAL	2054	TRIFLURALIN
0117	HYDROGEN SULFIDE	R	1094	ASBESTOS	2055	DAZINON (SPECTRACIDE)
0118	COPPER	R	1095	ZINC	2056	LOHSBAN (CHLOROTRIPOL)
0119	CYANIDE	R	1096	CARBON DIOXIDE	2057	MALATHION
0120	FLUORIDE	R	1097	COLOR	2058	ISOFLUMETHYL (SUTHOM)
0121	BACARBONATE AS HCO3	R	1098	CORROSIVITY	2059	ISOFLUMETHYL (SUTHOM)
0122	HYDROGEN SULFIDE	R	1099	HARDNESS, TOTAL (w CaCO3)	2060	TRITHION
0123	IRON	R	1100	HARDNESS, CARBONATE	2061	ETHION
0124	IRON, SUSPENDED	R	1101	HARDNESS, NON-CARBONATE	2062	2, 3, 7, 8-TCDD (OXIDM)
0125	LEAD	R	1102	HARDNESS, CALCIUM MAGNESIUM	2063	PARATHION (ETHYL)
0126	MAGNESIUM	R	1103	CALCIUM	2064	HEPTACHLOR
0127	MANGANESE	R	1104	OCOR	2065	HEPTACHLOR EPOXIDE
0128	MANGANESE, SUSPENDED	R	1105	PH	2066	ENDOSULFAN I
0129	MERCURY	R	1106	ALKALINITY, TOTAL	2067	DOE - PARA, PARA
0130	MCKEL	R	1107	ALKALINITY, CARBONATE	2068	DIELDRIN
0131	TOTAL KILDAVE, NITROGEN	R	1108	ALKALINITY, CARBONATE	2069	DO - PARA, PARA
0132	NITRATE-NITRITE	R	1109	TOTAL DISSOLVED SOLIDS (TDS)	2070	ENDOSULFAN II
0133	NITRATE	R	1110	ALKALINITY, PHENOLYPTALEIN	2071	PHOSPHORIN
0134	POTASSIUM	R	1111	STABILITY INDEX	2072	ENDOSULFAN SULFATE
0135	PHOSPHATE, TOTAL	R	1112	AGGRESSIVE INDEX	2073	DOT - PARA, PARA
0136	ORTHOPHOSPHATE	R	1113	SCALE FORMING	2074	BUTACHLOR (BACHETE)
0137	SELENIUM	R	1114	TEMPERATURE (CENTIGRADE)	2075	CRYPTOSPORIDIUM
0138	SILICA	R	1115	LANGUIER INDEX (PHS)	2076	DIBROMACETONITRILE
0139	SILVER	R	1116	SATURATION INDEX	2077	CYANODEN CHLORIDE
0140	STRONTIUM	R	1117	NOTE: (RESERVED BY MHS)	2078	AMYL ACETATE
0141	SODIUM	R	1118	GLASOLINE	2079	BUTYL ACETATE
0142	SULFATE	R	1119	JET FUEL	2080	BUTYL ALCOHOL, N
0143	RESIDUE, TOTAL, FILTERABLE	R	1120	#1 FUEL OIL	2081	BUTYL ALCOHOL, SEC-
0144	RESIDUE, FILTERABLE-VOLATILE	R	1121	#2 FUEL OIL	2082	CHLOROBUTANE, 1
0145	RESIDUE, FILTERABLE-FIXED	R	1122	#3 FUEL OIL	2083	ETHYL ACETATE
0146	RESIDUE, TOTAL-VOLATILE	R	1123	MOTOR OIL	2084	ETHYL ALCOHOL
0147	RESIDUE, TOTAL-FIXED	R	1124	SUBMERSIBLE PUMP OIL	2085	ISO-OCTANE
0148	RESIDUE, NONFILTERABLE-FIXED	R	1125	VARISOL	2086	ISOBUTYL ACETATE
0149	CONDUCTIVITY @ 25 C UAHQ	R	1126	PROPANE	2087	ISOBUTYL ALCOHOL
0150	PA, CaCO3 STABILITY S.U.	R	1127	ENDRIN	2088	ISOPROPYL ACETATE
0151	ACIDITY TOTAL, CaCO3	R	1128	BAC-GAMMA (LINDANE)	2089	ISOPROPYL ALCOHOL
0152	ACIDITY M.O. CaCO3	R	1129	METHOXYCHLOR	2090	2, 4-D
0153	RESIDUE, TOTAL	R	1130	TOXAPHENE	2091	2, 4, 5-T (SILVER)
0154	RESIDUE, SETTLEABLE	R	1131	P-ISO-PROPYLTOLUENE (p-CYMENE)	2092	2-NITROANILINE
0155	PHOSPHORUS SOL	R	1132	DALAPON	2093	2-NITROANILINE
0156	PHOSPHATE REACTIVE	R	1133	DIOXAT	2094	2-NITROANILINE
0157	ANTHONY TOTAL	R	1134	ENDOTALL	2095	2-NITROANILINE
0158	BENTONIT TOTAL	R	1135	GLYPHOSATE	2096	2-NITROANILINE
0159	COO mg/l	R	1136	DI (ETHYLHEXYL) ASPATE	2097	2-NITROANILINE
0160	RESIDUE, VOL, MP/L	R	1137	THIACINE	2098	2-NITROANILINE
0161		R	1138	PAYE	2099	2-NITROANILINE

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2203	4-NITROANILINE	2795	METHYL METHACRYLATE	2426	TERT-BUTYL BENZENE
2204	AZOBENZENE	2796	CHLORINE	2427	SEC-BUTYL BENZENE
2210	METHYLCHLORIDE (CHLOROMETHANE)	2798	BIS (2-CHLOROETHYL) PHTHALATE	2430	BROMOCHLOROMETHANE
2212	DICHLORODIFLUOROMETHANE	2800	BENZO (A) ANTHRACENE	2440	DICAMBA
2214	DIOMETHANE	2802	BENZO (B) FLUORANTHENE	2441	METHANE
2216	CHLOROLTHANE	2804	DEAZO (K) FLUORANTHENE	2442	METHYL ACETATE
2218	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE)	2806	BENZO (A) PYRENE	2443	METHYL ALCOHOL
2219	TRICHLOROACETONITRILE	2808	IDENO (1,2,3-CG) PYRENE	2444	METHYL CELLOSOLVE
2222	BIS (2-CHLOROETHYL) ETHER	2810	DIBENZO (A,H) ANTHRACENE	2445	PROPYL ACETATE
2223	DI-N-OCTYLPHTHALATE	2812	DIBENZO (G,H,J) PERYLENE	2446	PROPYL ALCOHOL, M
2224	TRANS-1,3-DICHLOROPROPENE	2814	M-NITROSODIMETHYLAMINE	2447	VINYL ACETATE
2225	HEXACHLOROETHANE	2816	M-NITROSODI-N-PROPYLAMINE	2448	VINYL 2 CHLOROETHYL ETHER
2226	TRANS-1,2-DICHLOROPROPENE	2818	4-CHLORO-PHENYL-PHENYL ETHER	2450	COUNTER (TERBUFOB)
2227	2-METHYL-4,4-DIMETHYLPHENOL	2820	3,3-DICHLOROBENZONINE	2451	DYFONATE
2228	CIS-1,3-DICHLOROPROPENE	2822	BIS (CHLOROMETHYL) ETHER	2452	MOCAP
2229	M-NITROSODIPHENYLAMINE	2824	PENTANE	2453	METHYLZIM (BENCOM)
2230	ANILINE	2826	PENTACHLOROPHENOL	2454	PHORATE (THIMET)
2231	BENZYL ALCOHOL	2828	PENTACHLOROPHTHALENE	2455	PROWL
2232	1,2-DIBROMOETHYLENE	2830	3,4-DIMETHYLPHENOL	2456	AMIBEN
2233	2-METHYLPHENOL	2832	2-CHLORO-4-CRESOL	2457	BOLSTAR
2234	2-CHLOROETHYLPHENYL ETHER	2834	2,4,6-TRICHLOROPHENOL	2458	DICHLOROETHYLENE (TOTAL)
2236	4-METHYLPHENOL	2836	2,4-DIMETHYLPHENOL	2459	1,3-DICHLOROPHTHALENE (TOTAL)
2238	DIOMETHANE	2838	2-METHYLPHENOL	2460	TRICHLOROPHTHALENE (PREON 113)
2239	DEAZOIC ACID	2840	2-CHLOROPHTHALENE	2461	FOAMING AGENTS (SURFACTANTS)
2240	ACETYLENE	2842	4,6-DIMETHO-D-CRESOL	2462	PHENOLS
2241	4-CHLOROANILINE	2844	ALPHA-BHC	2463	CARBON, TOTAL-ORGANIC
2242	ACRYLONITRILE	2846	BETA-BHC	2464	KEPONE
2243	2,4,5-TRICHLOROPHENOL	2848	DELTA-BHC	2465	1,3-DIBROMO-3-CHLOROPROPANE (DBCP)
2244	ACETONE	2850	ALDRIN	2466	MIREX
2245	BIS (2-CHLOROISOPROPYL) ETHER	2852	ORTHIO-PARA DDE	2467	HMPA
2246	ISOPROPYL ETHER	2854	ORTHIO-PARA DDD	2468	CHLOROFORM
2247	HEXACHLOROBUTADIENE	2856	ORTHIO-PARA DOT	2469	BROMOFORM
2248	METHYL ETHYL KETON	2858	KELTHANE (DIOFAL)	2470	BROMOCHLOROMETHANE
2249	METHYL ISOBUTYL KETONE	2860	TEDON	2471	DIBROMOCHLOROMETHANE (CHLOROBROMOMETHANE)
2250	BIS (2-CHLOROETHOXY) METHANE	2862	ENDRIN ALDHYDE	2472	ETHYLENE DIBROMIDE
2251	METHYL-TERT-BUTYL-ETHER	2864	KEPOSEME	2473	MAXIMUM TOTAL TRICHALOMETHANE POTENTIAL
2252	MTHODENZENE	2866	M-HEXANE	2474	TTHM
2253	1-CHLOROHYDRIN	2868	CIS-1,2-DICHLOROBENZENE	2475	TOTAL XYLENES
2254	3-CHLOROPHTHALENE	2870	DECHLOROBIPHENYL	2476	ETHYLENE GLYCOL
2255	ACENAPHTHYLENE	2872	AROCLO 1016	2477	CHLORDANE
2256	ACENAPHTHYLENE	2874	AROCLO 1221	2478	FORMALDEHYDE
2257	ISOPHTHENE	2876	AROCLO 1232	2479	P-XYLENE
2258	FLUORENE	2878	AROCLO 1248	2480	METHYLENE CHLORIDE
2259	ACRYLAMIDE	2880	AROCLO 1254	2481	8-CHLOROTOLUENE
2260	1,2-DIPHENYLDIAZINE	2882	PCB 1262	2482	4-DICHLOROBENZENE
2261	HEXACHLOROBENZENE (HCB)	2884	AROCLO 1266	2483	6-DICHLOROBENZENE
2262	4-ETHYLPHENYL PHENYL ETHER	2886	TOTAL DICHLOROBENZENES	2484	DICHLORODIMETHANE
2263	PHENANTHRENE	2888	DIBROMOMETHANE	2485	VINYL CHLORIDE
2264	ANTHACENE	2890	1,1-DICHLOROPROPENE	2486	1,1-DICHLOROETHYLENE
2265	DIMETHYLPHTHALATE	2892	1,3-DICHLOROPROPENE	2487	TRANS-1,2-DICHLOROETHYLENE
2266	DIMETHYLPHTHALATE	2894	2,2-DICHLOROPROPANE	2488	1,2-DICHLOROETHANE
2267	FLUORANILIN	2896	1,2,4-TRIMETHYLBENZENE	2489	1,1,1-TRICHLOROETHANE
2268	DI-N-BUTYLPHTHALATE	2898	1,3,5-TRIMETHYLBENZENE	2490	CARBON TETRACHLORIDE
2269	DI-N-BUTYLPHTHALATE	2900	1,3,5-TRIMETHYLBENZENE	2491	1,3-DICHLOROPROPANE
2270	DI-N-BUTYLPHTHALATE	2902	1,3,5-TRIMETHYLBENZENE	2492	TRICHLOROETHYLENE
2271	DI-N-BUTYLPHTHALATE	2904	1,3,5-TRIMETHYLBENZENE	2493	1,1,2-TRICHLOROETHANE
2272	DI-N-BUTYLPHTHALATE	2906	1,3,5-TRIMETHYLBENZENE	2494	1,1,1,2-TETRACHLOROETHANE
2273	DI-N-BUTYLPHTHALATE	2908	1,3,5-TRIMETHYLBENZENE	2495	TETRACHLOROETHYLENE
2274	DI-N-BUTYLPHTHALATE	2910	1,3,5-TRIMETHYLBENZENE	2496	

PUBLIC WATER SYSTEM SUPERVISION PROGRAM KEY TO INTERPRETING FRDS REPORTS

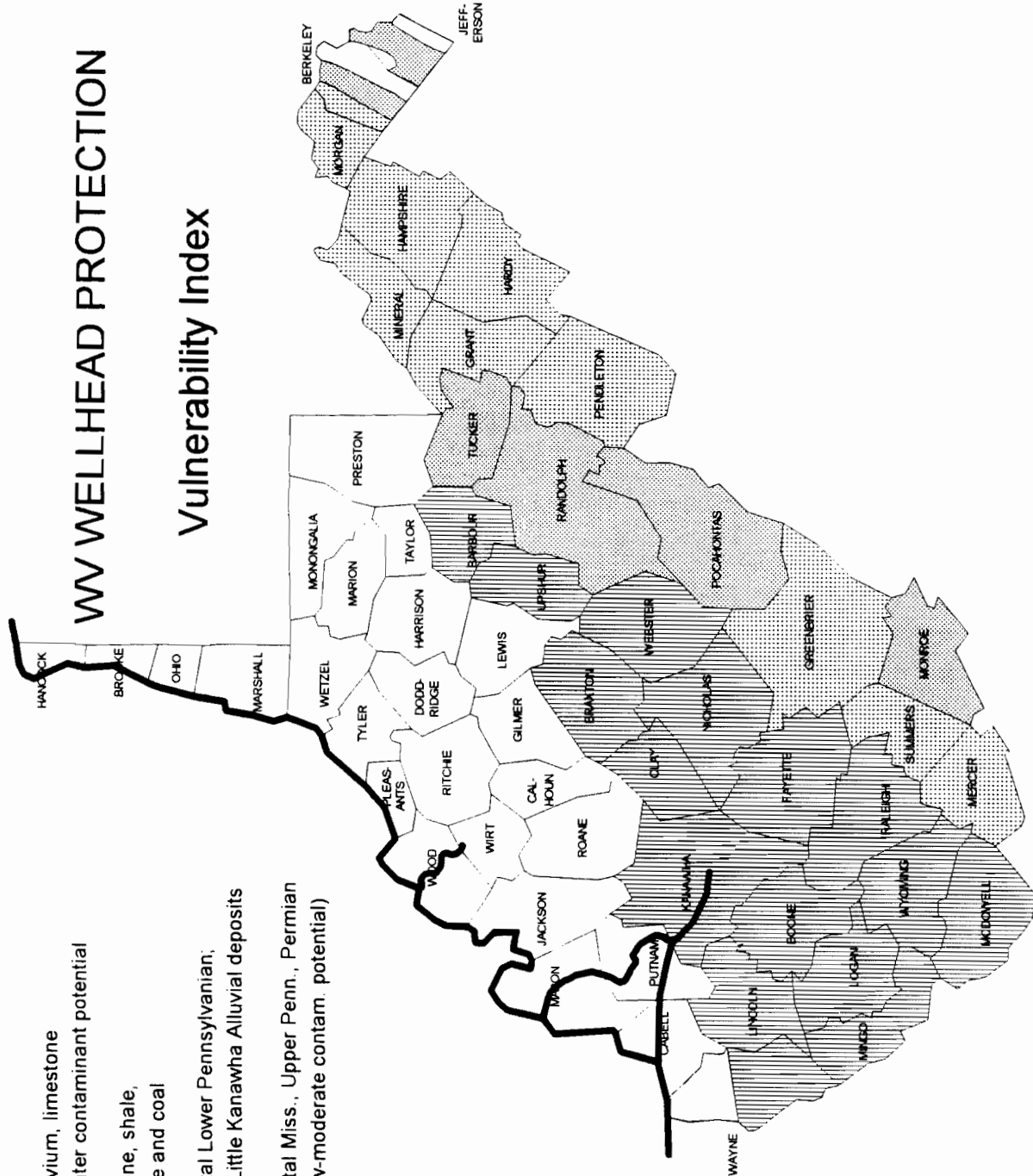
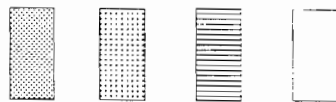
CONTAMINANT CODES

N- REGULATED M- MONITORING ONLY

2088	1,1,2-TRICHLOROETHANE	M	4134	26-IRON-33	4258	52-TELLURIUM-132
2089	CHLOROBENZENE	M	4136	28-IRON-58	4260	53-IODINE-129
2090	BENZENE	M	4138	27-COLBAL-57	4262	53-IODINE-129
2091	TOLUENE	M	4140	27-COLBAL-58	4264	53-IODINE-131
2092	ETHYLBENZENE	M	4142	27-COLBAL-60	4266	54-CESURIUM-131
2093	BROMOBENZENE	M	4144	28-MICHEL-58	4270	54-CESURIUM-134
2094	ISOPROPYLBENZENE	M	4146	28-MICHEL-63	4272	54-CESURIUM-135
2095	M-XYLENE	M	4148	30-ZINC-65	4274	54-CESURIUM-136
2096	STYRENE	M	4150	32-GERANIUM-71	4276	54-CESURIUM-137
2097	O-XYLENE	M	4152	33-ARSENIC-73	4278	54-BARIUM-140
2098	N-PROPYLBENZENE	M	4154	33-ARSENIC-74	4280	57-LANTHANUM-140
2099	NOTE: (RESERVED BY MSB)		4156	33-ARSENIC-78	4282	58-CERURIUM-141
2100	COLIFORM	M	4158	33-ARSENIC-77	4284	58-CERURIUM-143
3001	HETEROTROPHIC BACTERIA (HPC OR B-7)	M	4160	34-BERLIUM-76	4286	58-CERURIUM-144
3002	ENTEROCOCCI/100 ml	M	4162	34-BERLIUM-80	4288	56-PRASEODYMIUM-143
3003	FECAL STREPTOCOCCUS	M	4164	35-BROMINE-82	4290	56-NEODYMIUM-147
3004	STAPHYLOCOCCUS	M	4166	37-RUBIDIUM-86	4292	81-PROMETHIUM-147
3005	NON-COLIFORM GROWTH IDENTIFICATION		4168	37-RUBIDIUM-87	4294	81-PROMETHIUM-148
3006	IRON BACTERIA 10		4170	38-8-TITANIUM-85	4296	81-PROMETHIUM-149
3007	SALMONELLA-BHIOELLA		4172	38-8-TITANIUM-86	4298	82-SAMARIUM-151
3008	QUARDA LAMBDA		4174	38-8-TITANIUM-90	4300	82-SAMARIUM-153
3009	FUNGUS/mt		4176	38-YTTRIUM-90	4302	83-EUROPIUM-154
3010	VIRUS PFU/AL		4178	38-YTTRIUM-91	4304	83-EUROPIUM-155
3011	ACTINOMYCETES/mt		4180	40-ZIRCONIUM-93	4306	83-EUROPIUM-156
3012	LEGIONELLA		4182	40-ZIRCONIUM-96	4308	84-SODIUM-159
3013	FECAL COLIFORM		4184	41-NIOBIUM-93	4310	86-TERBIUM-160
3100	TOTAL COLIFORM		4186	41-NIOBIUM-95	4312	86-TERBIUM-161
4000	OP088 ALPHA EXCL RADON & U	M	4188	42-MOLYBDENUM-93	4314	86-DYSPROSIUM-166
4002	OP088 ALPHA INCL RADON & U	M	4190	42-MOLYBDENUM-98	4316	87-HOLMIUM-166
4004	RADON	M	4192	43-TECHNETIUM-98	4318	87-HOLMIUM-168
4006	URANIUM	M	4194	43-TECHNETIUM-97M	4320	88-ERBIUM-168
4007	URANIUM-234	M	4196	43-TECHNETIUM-99	4322	88-THULIUM-170
4008	URANIUM-235	M	4198	43-TECHNETIUM-99M	4324	88-THULIUM-171
4009	URANIUM-238	M	4200	44-RUTHENIUM-97	4326	70-YTTERBIUM-173
4010	COMBINED RADON (220 & 226)	M	4202	44-RUTHENIUM-103	4328	71-LUTETIUM-177
4012	PHOTON EMITTERS	M	4204	44-RUTHENIUM-106	4330	73-HAFNIUM-181
4020	RADON-220	M	4206	45-RHOADIUM-109	4332	73-TANTALUM-182
4030	ALPHA DISSOLVED	M	4208	46-PALLADIUM-103	4334	74-TUNGSTEN-181
4040	BETA DISSOLVED	M	4210	46-PALLADIUM-107	4336	74-TUNGSTEN-185
4042	BETA DISSOLVED	M	4212	47-SILVER-106M	4338	74-TUNGSTEN-187
4044	POTASSIUM-40, TOTAL	M	4214	47-SILVER-110M	4340	75-RHENIUM-183
4100	OP085 BETA PARTICLE ACTIVITY	M	4216	47-SILVER-111	4342	75-RHENIUM-184
4101	MAN-MADE BETA PARTICLE & PHOTON EMITTERS	M	4218	48-CADMIUM-109	4344	75-RHENIUM-187
4102	TRITIUM	M	4220	48-CADMIUM-113M	4346	76-OSMIUM-185
4104	4-BERYLLIUM-7	M	4222	48-CADMIUM-115	4348	76-OSMIUM-186
4106	4-BERYLLIUM-10	M	4224	50-TIN-113	4350	76-OSMIUM-191
4108	6-CARBON-14	M	4226	50-TIN-123	4352	76-OSMIUM-193
4110	OP085 ALPHA PARTICLE ACTIVITY	M	4228	51-ANTIMONY-122	4354	77-IRIDIUM-190
4112	13-PHOSPHORUS-32	M	4230	51-ANTIMONY-124	4356	77-IRIDIUM-192
4114	18-SULFUR-35	M	4232	51-ANTIMONY-125	4358	78-PLATINUM-191
4116	17-CHLORINE-36	M	4234	51-ANTIMONY-127	4360	78-PLATINUM-193M
4118	20-CALCIUM-48	M	4236	52-TELLURIUM-123M	4362	78-PLATINUM-193
4120	20-CALCIUM-47	M	4238	52-TELLURIUM-127M	4364	78-PLATINUM-193
4122	21-SCANDIUM-46	M	4240	52-TELLURIUM-127M	4366	79-GOLD-196
4124	21-SCANDIUM-47	M	4242	52-TELLURIUM-127M	4368	79-GOLD-198
4126	21-SCANDIUM-48	M	4244	52-TELLURIUM-127M	4370	81-THALLIUM-204
4128	23-VANADIUM-48	M	4246	52-TELLURIUM-127M	4372	82-LEAD-203
4130	24-CHROMIUM-51	M	4248	52-TELLURIUM-127M	4374	82-LEAD-210
4132	25-MANGANESE-54	M	4250	52-TELLURIUM-127M	4376	83-BISMUTH-206
			4252	52-TELLURIUM-127M	4378	83-BISMUTH-207
			4254	52-TELLURIUM-127M	4380	83-BISMUTH-210
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					4668	84-POLONIUM-210
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					4672	84-POLONIUM-210

WW WELLHEAD PROTECTION

Vulnerability Index



S A M P L E L E T T E R S

West Virginia Bureau of Public Health
Office of Environmental Health Services
Environmental Engineering
815 Quarrier Street, Suite 418
Charleston, WV 25301-2616

RE: Application for Phase II/V Monitoring Waiver

Water System _____
Address _____

Phone Number _____
PWSID Number _____
County _____

Gentlemen:

The above named water system requests a monitoring waiver for elimination or reduced sampling for all Phase II/V chemicals in which our system is eligible. It is understood that this application for a waiver in no way relieves our system of required routine monitoring of Phase II/V chemicals until a notification from the State is received indicating that the waiver has been granted.

Signed _____
Title _____
Date _____

file: waiveapp.wp



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Gaston Caperton
Governor

RE: Application for Phase II/V
Monitoring Waiver

System: _____

PWSID: _____

County: _____

Dear Owner/Operator:

We have received your Application for Phase II/V Monitoring Waiver and have scheduled your system for a vulnerability assessment. It should be understood that this application for a waiver in no way relieves your system of required routine monitoring of all Phase II/V chemicals until you receive a waiver notification from the State (unless an area wide waiver has previously been issued). This notification will inform you of which chemicals, if any, a waiver has been granted and also include a new monitoring schedule which will reflect all waivers.

We appreciate your cooperation in meeting the Phase II/V Monitoring Requirements. If you have any questions concerning the waiver process, please contact us. Our address is: Office of Environmental Health Services, 815 Quarrier Street, Suite 418, Charleston, WV 25301-2616.

Sincerely,

Environmental Engineering Division

cc: County Health Department
OEHS District Office